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A THREE WEEKS' SCAMPER
THROUGH THE
SPAS OF GERMANY AND BELGIUM,
WITH AN APPENDIX
ON THE NATURE AND USES OF
MINERAL WATERS;

BY
ERASMUS WILSON, F.R.S.



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JOHN CHURCHILL, NEW BURLINGTON STREET.

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CHAPTER I.

LONDON TO CALAIS.

AN autumn holiday is one of the institutions of Great Britain; so that a hard-worked Doctor need little excuse for giving himself three weeks of, I was going to say *rest*, but I prefer to say, for reasons that will presently appear, *change*. Three weeks of change; and the less so, as said Doctor alleges that he has not had a holiday before since he has been in practice; and, as he promises to devote it to an useful purpose, begetting, as he hopes, increased health and vigour to himself, a state that cannot but redound to the benefit of his patients, and some few practical and practicable notions on the Medicine of the renowned MINERAL SPRINGS OF GERMANY.

It is quite true, but wholly inexcusable, that towards the end of a London season, the Doctor medicinæ, jaded by labour and exhausted by care and anxiety, becomes, *tant soit peu*, impatient and irritable, is apt to ride the

high horse, and forget that his "religio medici" demands of him patience, forbearance, and sympathy to the last degree; and that if his patient be somewhat tiresome, he is made so by disease, by pain, and by a natural apprehension, originating in ignorance of the truth, that his malady may jeopardise his life, and, perhaps, more and dearer interests that hang upon his life. And if all this be true, it is equally true that strong physical health is as necessary to the Doctor, in the interests of his patients, as moral and mental strength; the strong man thinks strongly and comprehensively, and his vigorous earnestness forces conviction on his patient, and develops and secures his patient's faith; in a word, his faith begets faith. Well, dear Reader, I think I have secured your leave for the Doctor's holiday; for if his reasons have not touched you, you will at least be glad to get rid of his eloquence.

The Doctor must have his passport, for he is going to pass through countries which are essentially inquisitive in their nature; the free Englishman must have his label, otherwise, according to the excellent Bradshaw, who, having published a Continental Railway Guide and General Handbook, has become a kind of English Foreigner, "in the eye of the law on the Continent," he is a "thief, vagabond, and suspected person;" and the philanthropic Bradshaw, in the interests of this monocular law of the Continent, impresses upon us "that it is a matter of

necessity, from which there is no exception." So that, as the Doctor has no intention of being regarded by this one-eyed arbiter of honesty as a "thief, vagabond, and suspected person,"—albeit, to be caught in the custom-house of Calais might warrant the two latter epithets,—he strides away down to the Foreign Office in his own city of London and Westminster, and complacently and politely asks for a passport. "You must bring a letter of identity from your banker, sir," replies the clerk of passports. "But, sir," says the Doctor, "I have already complied with the first regulation of the Foreign Office, to apply in writing to Her Majesty's Secretary of State for Foreign Affairs, and I now come in person to receive the passport." "That is not sufficient, Doctor. If you refer to regulation 5, you will see that 'passports are granted to persons who are either known to the Secretary of State, or—' " "Well, sir," replies the Doctor, "as a Fellow of the first scientific society of this country, the Royal Society, which ranks among its Members the Prince Consort, and most of the crowned heads of Europe, I conceive that I am known, or at least ought to be known, to the Secretary of State for Foreign Affairs." "That is not sufficient, Doctor," replied the man in office; "you must have a letter from your banker." "But, sir," says I, "suppose Charles Dickens, or my lamented friend Douglas Jerrold, had applied for a passport; are they unknown to the Secretary of State for

Foreign Affairs?" "They must have a letter from their banker," was the answer. So, happening by good luck to have a banker, the Doctor hurries off to Cavendish Square, obtains a duly dated and signed *permit*, with an unbroken seal of red wax, which he is careful not to tamper with on the way, and exchanges his banker's passport for the passport of the Foreign Office. The Doctor feels his boasted English freedom and the dignity of his scientific and professional position a little ruffled by this unexpected adventure; but scribbles in his diary: "Foreign office; rebuff the first; swallowed the pill; may do me good; take a little British pride out of me; take foreign rigour all the better; humility excellent in theory, better in practice." I wonder if that excellent official of the Foreign Office took me, without my banker's letter—my 'papers,' as Bradshaw facetiously terms them,—for a 'thief, vagabond, and suspected person.' I trust that Mr. Bradshaw will, for the future, make it quite clear to all whom it may concern, that persons seeking passports must first obtain a passport from their banker; and I further recommend that, in the next issue of "Regulations respecting Passports," the printer's devil should take upon himself to make the following correction in Regulation 5; namely, "Passports are granted to persons who are either known "*personally*" to the Secretary of State, or recommended to him," &c. &c. Such a correction would save the dig-

nity of more than one man, who, knowing his own usefulness, claims the honour and respect of his fellow citizens.

Well, the passport obtained; the circular notes and letter of credit pocket-booked; the carpet bag locked; the railway wrapper buckled; and the blue canvass bag, containing the transcendant Bradshaw, travelling cap, Times, Punch, and Black's travelling atlas in hand; away glides the Doctor, at 8.30 p. m. on the 3rd of September, 1857, from the London Bridge terminus, with a through ticket in his pocket in the shape of a small yellow volume with eight leaves, looking like a book of choice ballads, diamond edition, only one halfpenny, to Cologne, with liberty to stop wherever he likes, and prolong his journey for a month, if he choose, and to deliver to any one who may have the right to claim and the wish to possess a "leaf out of his book."

The two hours and a half railway jumble to Dover, in the dim twilight of its feeble carriage illumination, is necessarily dull, suggestive only of thoughts of leaving friends and home, encountering perils both by sea and land, and engaging in an undertaking where difficulties may impede, but which an inward voice declares must and shall be overcome. The Doctor was awaked from his reverie by that sound so dear, so natural to Britons, the dashing of the waves against the terrace along which the railway train, after burrowing beneath Shakespeare's Cliff, makes

its triumphal entry into Dover. The night was somewhat obscure, and a noisy north-easterly breeze promised a stiff head wind and slow passage to Calais. "Your ticket, sir, if you please;" and I had the pleasure of giving the petitioner the first leaf out of my book. "This way, sir, to the Calais packet; that is the packet for Ostend." So, being a thoroughly bad sailor, although the son of a naval officer, and a foremost man in many a rough sea-berth where Liston, the surgeon, stood at the helm, I shuddered at the prospect of finding myself sailing to Ostend, instead of the more neighbourly Calais.

An odd sight is a Calais packet, particularly at night; it was now between eleven and twelve:—the cabin is small; but every locker, shelf, and resting place, the table and under the table, is encumbered with some prostrate form, each looking as hideous as night-cap, cloak, travelling cap, and wraps of every fashion, can make it; and suggesting the idea of a field of battle, littered by the slain. Here you meet with a pair of legs without any apparent body; there, a brace of arms, evidently apart from the trunk to which they ought to have hung; here is an isolated head, alas! for the poor fellow to whom it once belonged; now, I stumble over the corpse-like form of a fellow creature wrapped in a military cloak, as if prepared for interment; then, there is a group of lucky fellows who have escaped the fate of the rest, and are demolishing bitter beer and bread and

cheese around a kind of altar-piece, from which the spirit within hands spirits without ; while here—oh, unhappy sight !—a turbaned head hangs listless over a steward's basin. On the deck, the vision was alike ; but there the fury of the battle had been less ; the bodies were not so numerous ; here and there a stiffened form might be seen, expressive of the agonies of its last waking breath ; some with limbs drawn up, and some with features calm as sleep, but all fearfully pale ; here and there a seemingly wounded brave staggered and reeled as he attempted to walk ; while others clung in speechless misery to the shrouds—a salt-water term, that might perchance too surely realise their eventful future. All this while, and over this desolate scene, the wind blew fiercely ; a lady struggled to maintain her equilibrium on her camp stool ; while her husband ever and anon added his weight to hers to save her from being wafted overboard by the bellying parachute which served her in place of a hat ; at last, she could stand it no longer ; she scuttled away to the lee scuppers and was very sick, and the parachute was converted for the nonce into a paravent.

But what were you about all this time, Doctor ? You started by saying that you were a bad sailor. How did you fare ? Why, dear Reader, I was busy with an experiment of my own, in corpore vile, and no less an one than to determine the cause of, and thence to deduce a remedy for, sea-sickness. So, after looking about for a

little while on the scene I have just described, and thinking with what zest a medical student would survey such a shower of arms and legs, and heads and necks, I began to reflect that the predisposing cause of sea-sickness must be the unwonted motion to which the body is subjected; that it was not the horizontal motion, nor the lateral or oscillating motion, for both of these we have in a railway carriage, but the vertical motion, which was the chief element of mischief; and not the vertical motion alone, but all the motions together; the vertical motion—that is, the rise and fall of the body—being that to which the organic system is most unused, and of which therefore it would be most susceptible. These varied motions, after a time, are felt by the organic system of nerves, that system which commands and regulates the actions of the digestive organs; and the impression being at once unnatural and disagreeable, that said nerves evince their objection to the process, by the only kind of sensation of which they are capable; not ordinary pain, which is an attribute of the nerves of common sensation, but an equally painful condition of the organs to which they belong, namely, nausea and faintness, quickly followed by an imperious necessity to—let me borrow an expression from the Calais packet—reverse the engine. We may therefore condense the phenomena of sea-sickness into a very narrow space; namely, motion, and organic sensation; and upon this narrow space may concentrate the

fire of all our remedial artillery. It is quite true that it is not given to the nerves of all persons to appreciate these sensations with equal acuteness. As there are some of the creatures who people this world who have, or seem to have, no brains; others, no hearts; and others, no bowels—that is, of compassion; so there are specimens of the human family who seem to exist without nerves; while others are all nerve; and a third class, by education—that is, by habit,—are able to stifle the sensations of their nerves. The great Nelson always suffered from sea-sickness in rough weather, particularly on first going to sea after a residence on shore; and I have seen ladies whom the mere sight of the motion of the waves, or the smell of a ship, was sufficient to throw into a state of nausea. Children offer a singular variety in this respect. Some never feel sickness when on the sea; while others are unable to bear the motion of a carriage, even a railway carriage, without nausea.

The seat of the sense of nausea is the pit of the stomach; and at the bottom of that pit—like a sorcerer in his cave—lies the solar plexus, the great wizard that directs the tidal crises of the stomach, its tempests and its calms; its winds and its volcanic emotions; and to this great wizard the *petitio ad misericordiam* is raised by those who would secure his good offices; to him the offerings of sacrifice are made, according to the varied belief of his votaries; some come smiling on, with the

conviction that they have made him their friend by the offering of a good breakfast or dinner; some give him a stiff sou-wester, as the sailors have it—that is, a glass of strong grog; others try to make him sneeze with a pinch of cayenne pepper; some would tempt him into good-nature with peppermint; others physic him with camphor or ercosote; others, again, send him to sleep by means of laudanum or morphia, suffocate him with ether, or stupify him with chloroform. Each pilgrim has faith in his own nostrum, even when it fails; as it is sure to do nine times in every ten. Then we have a more modest class of devotees, who approach him timidly; they stuff his *pit* with a camphor bag, or cover it up with a warm plaster, be it of eummin or frankincense, and, thus armed, they boldly wait his pleasure.

Now, far be it from me to deny that the solar plexus approves of a good meal; on the contrary, no genius ever recorded in the “Thousand and One Nights” loves good things better than he, and to make him in every way comfortable is a step of the first importance; but we must remember that he is to be comforted, not oppressed; he generally likes what he is accustomed to, and administered with the usual forms and at the usual periods; a breakfast at breakfast-time, a dinner at dinner-time, and so forth; but he neither approves of being devilled with cayenne and brandy, nor made stupid with laudanum, chloroform, or camphor. If he be hungry,

give him meat; if he be athirst, give him soda-water, either alone or with a little sherry or brandy; and if he be chilled, clothe him warmly if you like, with a camphor pad, or cummin or frankincense plaster: the external remedies can do no harm, and they often do good, not merely because they give confidence to the individual and allay apprehension, but because they bestow warmth and pressure.

But, however conducive to the prevention of sea-sickness may be the securing of a friendly feeling on the part of the solar plexus, by the inner and outer comforts herein noted, there is a process which would seem to deserve to take precedence of these; namely, the prevention of its exciting cause—motion. And here again we find worshippers not less zealous than those who have gone before. Some throw themselves on the ground and remain motionless during the whole voyage, with their brow humbly resting on the floor; others cast themselves on their backs, and, shutting their eyes, remain alike immoveable; while others sit with wooden firmness gazing unchangeably on some fixed spot, such as a star, an object on the horizon, or a stationary point, if such there be, on the vessel. And wherefore these extraordinary postures, which resemble the antics of the Indian Fakirs? The answer is simple: to fix the muscular system, over which we have control, and by that fixture to steady, if not totally to fix, the solar plexus. If we effect this, we

prevent the motions of the vessel from reaching those nerves, and we thereby arrest the after consequences, nausea and vomiting. Before starting from home, my brother reminded me of this voluntary exercise of control over the muscular system, and mentioned its success in himself; he remarked, also, that the priests of old sold charms to dispel sea-sickness, and that these charms, which were cabalistic figures written on parchment, were bound tightly around the person; their success appearing to depend mainly on their close pressure against the trunk of the body. It was to illustrate this experiment that I now set myself, thinking that my proneness to seasickness would give it a fair trial. In the absence of a belt, I tied a shawl tightly around my trunk, making strong pressure from the hips upwards to the middle of the chest, and then sat down on one of the benches to observe the result; I further fixed my heels against the deck, and, crossing my arms on my chest, resisted with all my power every movement of the vessel. I escaped without a feeling of uneasiness, while several around me and in the cabin were extremely ill; I have said that there was a good deal of motion in the vessel, but not much rolling, and the passage could not be termed rough. On my return passage, I did the same, and with an equally satisfactory result; but the experiment was also doubtful, from the sea being calm and the transit short. I leave it to others to give the plan a further

trial, which it deserves, as being correct in principle, even if it fail to be universally certain in practice.

The passage from Dover to Calais by night, though short, and admirably performed, a brief ninety minutes, yet leaves a little oasis in the mind that is pleasant to look back upon. There are the lights of Dover and of the departing packets ; then Little Dover in the distance, peeping out from its sheltered nook under the high hills ; Shakspeare's Cliff on the left, drilled through its base by that slender iron link, of vast extent, that is rapidly drawing together the most distant parts of the earth ; Dover Castle on the right, and the bright, ever-watchful eyes of the South Foreland lights ; while, far away to the right, may be seen, sparkling in the darkness, the lights on the Goodwyn and North Foreland ; then, straight ahead, in a line with the bowsprit, are the two lights of Calais, the light-house and the pier ; while, to the right, old Grisnez is blazing away in the midst of the waters like the blinking orb of some half-seas-over Cyclops. Suddenly the engine bursts into one of those wild and prolonged screams which only a steam-engine can utter ; an echoing scream is heard in the distance, a triangle of bright lights—blue, and red, and white—appears in the darkness, and then the outlines of a ship, with a strange black streamer floating away to the horizon. I began to think that I was in the presence of that great and most unnatural phenomenon, next to the sea-serpent, the Flying

Dutchman, when my mind was relieved by being told by the steward, who wanted another leaf out of my book, this time not easy to get at, for it was under my tightly girded shawl, that it was the sister packet on her way to Dover; and that this was the way that Calais packets said "How d'ye do to each other, and wished each other a pleasant trip." Come like shadows, so depart, as the great poet says; the two luminous spectres soon lost sight of each other; silence, as much as was compatible with a loud snoring wind, was restored, and in a few minutes we ascended the steps of the pier at Calais.

CHAPTER II.

CALAIS AND BELGIUM.

THE landing at Calais in the middle of the night, in the midst of the bustle and confusion that necessarily attend upon the movements of a crowd of persons, each anxious not to lose himself or any of his belongings, or be lost and extinguished in the multitude; nor to find himself in the wrong box or in the wrong train; and with an undefinable dread that he may, unknown to himself, be or resemble, some political miscreant whom the police have been sighing night and day for months past to secure, or perchance that the opening of his carpet bag may convict him of being the most atrocious smuggler that ever was nabbed, is not one of the most agreeable of the experiences of a traveller's life, and reminded me forcibly of being tucked up on a dentist's chair, with a pair of forceps before your eyes, shortly to hold in their iron grip one of your own devoted grinders. There was no escape; so to put the best face on the matter was the

best philosophy ; one even felt a kind of insane bravery creeping over one, and an imperious impulse to throw oneself upon one's torments, like the noble Roman, we read of at school, did upon the point of his sword. Here, Mr. Officer, behold my worldly goods, rout them up with the tip of your nose if you will, for they are all clean, which is more than they will be when I come back again ; seize me, imprison me ; lead me before your tribunals ; but behold—thanks, spirit of Bradshaw—behold my “papers.” It was like the vision of the Cross administered to the devil ; the Gendarme's power was at an end before those sainted “papers.”

Well, if anything can make purgatory pleasant, the custom-house purgatory at Calais is so made ; while preparations are being slowly developed to rifle your carpet bag in one apartment, and your character in another, you are civilly invited to console yourself in a *salle de restauration*, or buffet, in a third. You bolt your cutlet *au pommes de terre*, or scald your throat with your coffee or gravy soup, as the ease may be, although you are assured, as is the fact, that there is plenty of time ; and then having undergone the visé of an old employé who was every now and then at the point of strangulation from the effort to make French out of English names ; and having your belongings inspected, or, as happened in my case, put under seal to Aix-la-Chapelle without opening ; you make your way with the light tread of a

happy spirit and relieved mind to the railway train. I have already put it on record, that I crossed the English Channel from Dover to Calais without being sea-sick, a fact not to be forgotten, and I make a second chapter of it by repeating it here ; but if I had had the misfortune to be sea-sick, how cheerily would the light gravy soup of the French restaurateur, the *potage*, as he calls it, have sat upon my stomach ; if I had willed to prescribe the best medicine on earth for a bruised and wounded stomach, it would have been this very potage ; it was the bright spot of the Calais custom-house ; in the midst of the dark night, the worn and fainting traveller is greeted with a cup of warm wholesome gravy soup. Ah ! my countrymen at Dover, could you do as much ? alas, no ! you have no genius for soup ; that first of the arts of political economy, cookery, is unknown to you. Perhaps Soyer may save you yet, barbarian that you are ; minister of tough beef-steaks, and almost equally tough and smoky chops ; bitter beer, and half-and-half ; fit diet for stomachs of cast-iron ; pheugh ! You were once naked, and painted your skin with blue and yellow ; now you have found out the way of covering your skin with comfortable clothes, and making the yellow a lining for your pockets : now, Britons, one cheer more ; learn to cook ; that is, if you value our Doctor's approbation. .

The route to Aix-la-Chapelle cuts across a small corner of France from Calais to Lille ; then runs to

Mouscron, a small frontier town of Belgium, next to Ghent, then to Meehlin or Malines, then through Louvain to Liege; then to Verviers, which is another frontier town of Belgium, on the side of Prussia; and then to the Prussian town of Aachen or Aix-la-Chapelle. It is as though his Belgian Majesty wished to give the traveller an opportunity of seeing the whole length and breadth of his dominions, and believing that he did, I shall take the liberty of making a few notes on my way.

It strikes two, Friday morning; bye the bye, that reminds me that my journey was not commenced on a Friday, several of the great of the earth have given their sanction to the superstition which makes Friday a dies non for the commencement of an undertaking that is hoped to end prosperously. Napoleon had this prejudice; so had Wellington; and although I cannot say that I had any feeling of the kind, yet the head of my house, whose commands are not to be safely infringed, had expressed her sublime will that Friday it shouldn't be; and so it was, that instead of waiting for daylight, and having one more dream in England, I was packed up and off on Thursday night. Well, as the Calais clocks struck two, so distantly that I must confess I didn't hear them, the railway bell rang out its gentle tingle, not the deep braying, "Now, sir," of the English bell, but a more persuasive "Allons Monsieur, si'l vous plait;" and the engine giving a laughing squeak like a country girl who

has caught some funny idea that suddenly cracks her merrythought; away we started, railing along between the high hedges of la belle France. Calais, good night, name never to be mentioned without a remembrance of Hogarth, Lady Hamilton, and that once pink of fashion, Brummel. I had fallen fast asleep when my senses were suddenly and uncomfortably restored by being ordered to change carriages, unless I preferred an improvised trip to Paris.

Four o'clock found us at Lille, with an intimation that we might amuse ourselves in the buffet as best we could until half-past five, a long hour and a half. My fellow travellers, particularly the ladies, looked jaded and fatigued; one young lady betook herself into the corner to smooth her hair, while I with some of the rougher members of society established myself behind a mountain of bread and butter with slices of tongue, and coffee. I have discovered that there is no better way of killing time, when you are hungry, than eating and drinking; once on my travels, as I shall perhaps tell in its place, this inoffensive occupation saved me from extreme ennui. And I may as well, now I am in the mind, put another observation on record here; namely, that in travelling it is advisable to eat frequently, not much at a time, but often, and to avoid alcohol; thus, soup, coffee, tea, cutlets, fruit, soda or seltzer water, should form the staple of our travelling diet. Travelling naturally induces a little heat

and feverishness of system, which a cooling diet tends to allay, but which a heating diet might aggravate to an inconvenient degree. At half-past five, and before the sun had thought proper to open his bright eyes upon the sleepy world, we issued from Lille, passed its thick walls, crossed its drawbridges, and were once more en route. The morning air breathed upon our heated faces with an agreeable freshness ; and shortly after six, we were summoned to surrender our places and deliver our passports in the little Belgian town of Mouseron.

The Belgian railways have the character of being well served, and so they are ; the guards have a semi-military uniform, and the carriages are started by the blast of a musical trumpet ; in a long train there are two trumpet calls ; one which says, "All right at my end," and another, "All right at mine, so off we go." Sometimes the engine starts off with a clumsy attempt at a laughing chorus, but generally breaks into a wrong note, and is too glad to smother its blunder in the puff puff of its steam and the whirr of its wheels. Then there is another peculiarity of the Belgian and German trains ; namely, that, by means of a strong bar fixed to the side of the carriages, the guard is enabled to make his way along the wooden step from one end to the other of the train ; he does this repeatedly, collecting tickets where they are due, and ascertaining the destination of each of his passengers ; so that, after a few visits, he knows

them all by heart, and gives them the instructions they may chance to require. You get down at the next station, he says to one ; you change carriages when we stop, he says to another ; and then, if there be any questions to be asked, the traveller obtains every information, most civilly bestowed, from the guard of the train. The guard commences his visits the moment the train is in motion, which enables him to see that all is right. "I want to take a leaf out of your book, sir," said he to me, shortly after we had started from Mouscron ; and a leaf I handed him, and expressed a hope that he might profit by it.

As soon as daylight broke, I began to indulge in the view of the gay panorama that became gradually unrolled before me ; there were the green fields, the orchards, the streams of water, water-mills, and windmills ; strange looking houses, mostly white ; and pretty white villages, with their beautiful little church, its square tower, and tapering spire peering upwards into the sky ; then there were the artisans and husbandmen in their blouses, with their instruments of labour, and strange-looking carts and wagons, sometimes drawn by horses and sometimes by oxen. Further on, and indeed the whole distance from Mouscron to Ghent and Malines, the soil is a poor light grey sand, without a particle of stone. This soil gives the railway, and especially the stations, a particularly clean and smart appearance ; and as they are kept nicely swept, they look as if they had been carefully

sanded over. En route the sand has the moderate inconvenience of filling the carriage and covering the passengers with dust, and being raised into a cloud by every puff of wind.

It is interesting to observe the care with which every scrap of ground in Belgium is cultivated; there are no hedges, and the fields are laid out in strips of different crops. From its lightness, the soil is easily worked, and we have the sight, novel to English eyes, of ploughs managed by one horse and one man; labourers tilling the earth with large two-pronged hoes; and women weeding and working in the fields, sometimes wielding the hoe, sometimes on their knees, or sailing over the clods in immense wooden shoes as big as boats. The productiveness of the soil is the double result of careful husbandry and abundant manure; and the nose soon discovers that the large casks which are here and there distributing their rich contents over the ground are receptacles of liquid manure; without which, so poor a soil would bear crops of a very inferior kind; as it is, we have healthful plots of mangel-wurzel, tobacco, linseed, hemp, buckwheat, cabbages, turnips, and grass, but no corn.

I have said that there are no hedges, those wasteful barriers of our own fields at home; but whenever a fence is required, it is curious to see how slight a hedge may be constructed, and answer every purpose. Here and

there we meet with some of these living fences certainly not more than six or eight inches in thickness, the boundary of garden plots. At distant intervals, the fields are defended from the winds by long, straight rows and avenues of trees, generally poplars, from which, with a view to economy and the free ventilation of the land, the lower branches have been lopped. These long straight avenues give the country a peculiarly prim and formal appearance, and remind us of old Dutch landscapes, in which the poplar trees are exactly equidistant and precisely similar in shape. In the grazing lands, the absence of hedges suggests the idea of some of the extensive parks we see in England.

Across the middle of the kingdom, as illustrated by the line from Malines to the neighbourhood of Liège, the character of the soil is entirely changed; it is no longer light and sandy, but a fine rich corn and hop-bearing soil, reminding us strongly of Kent and Surrey; while higher still, namely at Liege, and towards the Prussian frontier, the country presents a varied succession of rocky hills and valleys, from the former of which, a rich store of mineral products is obtained.

If my readers will glance at the map, they will see that the railway route through Belgium, from Mouscron to Ghent, and from Ghent to Verviers, takes a course at first north east, cutting Belgium through its transverse diameter, and the lowlands that border on the sea, and

then east by south, through the longitudinal diameter of the kingdom ; so that by this route, which occupies only eight hours in its railway transit, the traveller is presented with a living panorama of the whole country : the low sandy soil, with its arable and grass lands in the belt towards the sea ; the rich corn and hop-bearing lands of the mid belt of the country ; and the wild rocks, the deep valleys, the wooded hills, and mountain streams of the uplands, on the Prussian frontier, in the midst of which latter are the warm springs of Chaudefontaine, the chalybeate waters of Spa, and the picturesque manufacturing town of Liege, surrounded by its iron mines.

The special characteristic of the Belgians appears to be the disposition to turn everything to use ; their women and children, their dogs, their priests, their cows, their oxen ; just as they utilise their trees, by selecting those that are tall and capable of serving as a barrier against the winds, without shading the soil or drawing much sustenance from its bosom, and, at the same time, by their lower branches, supply them with firewood ; they harness their dogs to small carts and wheelbarrows, turn their women into the fields to pick weeds and bear burdens, and make their cows and oxen chew the cud of the produce of their own labour. It is curious to see the old men, the boys, and the girls, leading a pair of oxen by their halters, or acting the part of a living

tether to prevent their straying into the neighbouring crops. Then there were some singular specimens of priests of the Flemish breed—short, thick, wooden-looking fellows, with immense shovel hats, and white petticoats hanging below black ; intended, as I thought, like their sister crinoline, to conceal an unsaintly embonpoint. I said that the Belgians worked their priests ; I may be wrong, but I judged so from their dirty faces, and equally dirty hands and nails ; but it may be that the only real work they do is to bear the sins of their fellow men ; certainly their backs are sufficiently broad.

It is a crying pity to see woman, whose place, according to us islanders, is her “ain house at hame,” spoiling her complexion in the burning sun, ugly from birth, but hideous in old age, the joint result of tanning and shrivelling. I suppose there may be a moral in it ; for just as the Chinese women are kept from gadding by the atrophy of their feet, so the Belgian women have their vanity of person kept in check by the disfigurement of their skin. And yet I fear that it is, after all, some principle of shabby economy ; it is the husbandry of woman—a reckoning with the daughters of Eve, for being her daughters. I should like to follow these poor creatures to their homes, and sit with them at their meals. Ah ! there methinks I should discover the secret of their ugliness ; the secret of their wasting labour, poverty. They are ill fed and hard worked, and they

become the mothers of a feeble and siekly race. How can a husbandman feed upon his friend, his companion, his fellow labourer, ox, after toiling with him in tilling the land for a quarter of a century? The riddle is quickly answered—hunger. But the ox is not for him; it is destined for the sausages of his luekier brother of the towns, the wealthier artisan.

At one of the stations, I just had time to pass in review a young army of raw reeruits, who, packed in open earriages, were standing there, while their officers, in all the conceit of dirks and ineipient mustachios, were puffing their cigars. They, that is, the reeruits, reminded me of a regiment of out-patients at one of our hospitals; mere boys, the sons of the very women whose state I have just been deploring; thin, weak, bloodless, some with their faeces tied up with tooth-ache, others with sore throats, and others sadly in want of a poeket-handkerchief. This is the raw material of war; and yet these youngsters, who to-day look as if their musket were too heavy for them, may, in a few years, by good food and good training, be turned into strong men and good soldiers. Lucky fellows to escape the liquid manure tank and the three-pronged hoe. By the way, excellent as liquid manure may be to the soil, I cannot think its diffusion through the breathing air conducive to health; certainly it is not the sweet breath of the freshly upturned earth that we read of as being the delight of our ancestors.

Reader, I fear you will think I am getting prosy ; but fancy eight hours spent with no better companion than one's own thoughts, or perchance with company far less agreeable. In Belgium and Germany, the world rides in second-class railway carriages ; none but Russian princes and English tradesmen take places in carriages of the first class ; so that no wonder there should be a little jumble of classes : and, in good truth, the second-class carriages of the Continent are not only equal, but superior in decoration and comfort, to modern first-class carriages at home. The fares are likewise very moderate ; a fact to be borne in mind, when we venture to grumble at having to pay for our luggage. The truth is, that the carpet-bag of England has to pay for the half-hundred weight black box, its travelling companion ; and we agree to this willingly, rather than submit to the obstruction and delay that must necessarily arise from weighing our baggage whenever we start on a journey. But I intended to remark, that at Malines I stumbled on a Belgian don, with his wife and daughter, who were travelling with a liveried servant. Now, as it would not have comported with the dignity of master and man that said servant should ride in the same carriage with his master and master's wife, the servant was put into another carriage of the same class, of which I was the occupant. I felt for the moment a little indignant ; but choked down my wrath, and determined, in revenge,

to make a pen-and-ink sketch of the fellow. First, he was ugly and greasy, as though his master kept him on half-allowance of soap; then such paws—oh! for a pair of ninepenny cotton whites, to hide those hideous fingers that handed his master's plate at dinner; then there was a decidedly vigorous attempt at tailors' finery; a drab turned up with black, black velvet breeches with gilt garters and drab gaiters; then he spread himself out in the last attitude of Belgian independence, one hand on the edge of the window, one on the arm of the carriage, as though he tried all he could to bleach those mahogany-coloured fins; then his feet were tossed up on the new carriage cushions; serve the Directors right, why not put the pig in his pen? then he fidgetted; then looked out of the window; how I longed to take him, Achilles like, by the heel, and make him swallow a mouthful of his native earth; he then unpacked his pockets of sundry green apples, upon which he began to feed with tremendous vigour. It's a great pity that his master, when he gave the ourang-outang a livery, could not afford him proper food and a little soap; not that a little soap would ever have washed out the rich japan of dirt he carried on his fists. Good God! that must be the ninth green apple the fellow has bolted. I rubbed my hands with joy; it required no imaginative foresight to see the chap doubled up that night with the pangs of indigestion, every apple gathering its atoms together into

a cricket-ball, or a nine-pounder shot. And then, oh ! if he would but send for a doctor ; a blue pill, and black draught in the morning, would settle him quite ; and no gentle Englishman like myself would be pestered with his presence again in a railway journey.

There is a fine old cathedral at Malines—Mechlin, as, from old association, I should like to call it, if in the spirit of consistency I were not at the next instant obliged to pronounce Liege, Luttich ; and Aix-la-Chapelle, to the danger of my jaws, Aachen ; but Mechlin is a household word that is ill represented by the ugly-sounding Malines. Well, Mechlin, the railway centre of Belgium, at which there exists an ample buffet, where hot outlets in piles and delicacies of every kind await the hungry traveller, is passed, and two hours more bring us to Liege. The view of Liege, the Birmingham of Belgium, so far as its manufactures in iron are concerned, is one of the most beautiful in the kingdom ; situated in a picturesque valley at the junction of the river Ourthe with the Meuse, surrounded by bare rocks and high beech-covered hills ; several of the hills being topped by the machinery of the mines below. The buildings of Liege are not congregated together as in most towns, but are scattered along the valley and interspersed with trees, while the high chimneys here and there stand out like monuments. The railway at Liege is laid on a steep incline, which requires the aid of machinery for working the train.

The route from Liege to Aix-la-Chapelle is carried through a beautiful country, for the most part along the level of valleys bounded by high rocks and beech-covered hills, and by the side of, or across, a mountain stream, the Vesdre, one while dancing along in a deep ravine by the edge of the road, at another, curving fantastically in its rocky bed, or suddenly forming itself into a quiet lake. In the midst of this charming scenery are the stations of Chênée, Chaudefontaine, Pepinster, Ensival, Verviers the Belgian frontier town, and beyond Verviers, Dolhain, Herbesthal, and the two long tunnels of Astenet; the distance being a little more than thirty-four miles. Chaudefontaine has received its name from possessing a thermal spring, while Pepinster is the station from which a short branch-line runs to Spa; to these two places I shall therefore devote my third chapter.

CHAPTER III.

CHAUDEFONTAINE. SPA.

CHAUDEFONTAINE and Spa being the first of the mineral springs which we meet with in our three weeks' scamper through the German Spas, we may stop to say a few words regarding them ; for, in truth, without this accidental precedence, Chaudefontaine would be passed over altogether, as possessing no other virtues than those that belong to a common warm bath, the quantity of saline matters in the waters being so small as to render them almost useless in a medical point of view.

Chaudefontaine and Spa, however, introduce us at once, and at the very threshold of our inquiry, to the primary and grand division of mineral waters ; namely, into *warm or thermal*, and *cold*. The spring of Chaudefontaine, rising to within thirty feet of the surface of the earth, and thence distributed in baths for use, is a thermal or warm spring, and possesses a temperature of 92° F. The waters of Schlangenbad, in Nassau, which

are also negative as regards their chemical composition, and, like the springs of Chaudefontaine, are used only as baths, are eleven degrees lower in temperature, namely, 81° F. ; while Wildbad, in the Black Forest of Würtemberg, rises to 97° ; Ems, to 131° ; Aix-la-Chapelle, to 135° ; and Wiesbaden, to 158° .

The curious phenomenon of water of an elevated temperature rising spontaneously to the surface of the earth, reminds us of our geological condition, and that the earth, with all its apparent solidity, is simply a fiery planet, hardened by cooling on the surface, but still burning within. Every now and then the gaseous products of combustion accumulate in immense quantities, and burst their way to the surface. This is the phenomenon termed a volcano ; and then we have the crust of the earth broken through, its masses tossed into rocks and mountains, and frequently the liquid matter within forced between the fissures of the broken surface, and cooling in vast masses, giving rise to volcanic rocks, such as basalt and porphyry, which bear every sign of their former state of liquid fusion. The thermal waters, therefore, coming from the neighbourhood of these vast fires, probably from caves that perform the office of gigantic cauldrons, and impelled to the surface either by the law which regulates the level of fluids, by the expansion caused by temperature, or by the pressure of volumes of gas developed by heat and combustion, filtering through

the rocks in which they are found, carry with them the soluble elements of those rocks, and thus become charged with different chemical matters. Chaudefontaine is either superficial in its source, or the rocky filters through which it makes its way are poor in soluble salts; for its waters contain only two grains and a half of solid matter to the pint; such solid matter being chiefly common table salt, namely, muriate of soda, and bicarbonate of lime.

From the nature of their source, thermal waters must always be sought for in a mountainous country; such as our own Derbyshire, where we have the Buxton springs; the mountains of Ardennes, which give birth to Chaudefontaine; and the rich mineral region of the Taunus mountains in Nassau; because these are the theatres of those volcanic operations already alluded to; and it is here that the hidden fires of the earth's centre approach nearest its surface. The country about Chaudefontaine, therefore, offers all those quiet beauties which are calculated to make it an agreeable seclusion: there are fine beech-covered hills, reminding us of Box Hill in Surrey on a large scale; bold perpendicular rocks; a picturesque valley for pleasant walks; and a bustling mountain stream, in which the disciple of Walton may hope to find a source of tranquil delights. Then there are the warm baths, wherein the fevered nerves may look for a soothing calm. In the language of Medicine, the baths of Chaudefontaine are *sedative*, and with their

warmth give an agreeable feeling of softness and comfort to the skin; a feeling soon to pervade the entire of the inner man. In this state of comfort; in rest and repose; in seclusion from the asperities of the living world, of towns and cities; and in the general tranquillity of the scene and scenery; is to be gained the medicine of Chaufontaine. The buoyant spirits of health and youth might find it dull; and all would find it to possess the usual fault of valleys, a relaxing and enervating influence; but the aches and pains of chronic rheumatism, the painful twitchings of disordered nerves, and the morbid fancies of an excited brain, might here be dispelled.

I have compared the thermal waters of Chaufontaine to a common warm bath; but there are three points in which they differ materially; firstly, in the perfect clearness and cleanliness of the water; secondly, in the uniform temperature, which under all circumstances must be the same; and thirdly, in the presence of gas, though in small quantity.

To reach Spa, the king of chalybeate springs, we descend from the railway carriage at Pepinster. Chaufontaine is eight miles and a quarter from Liege, and Pepinster twelvemiles and a half from the same place; and from Pepinster a single line of rails, eight miles and a quarter long, leads in a south-easterly direction to Spa, the journey being accomplished in twenty-five minutes. The line is for some distance cut through the solid rock;

then the train flies along upon a terrace by the side of the carriage road, crosses the road repeatedly, and then makes its way up a circuitous mountain valley, the Valley of Wayai, to Spa, with three small stations in its course. The scenery of the valley is of the severe kind; rugged rock; cold-looking beech-covered hills; very green meadow land, with a profusion of autumnal crocus, the *colchicum autumnale*; a ruined castle perched upon a hill; and a noisy mountain stream, the Wayai, fretting and struggling through its rocky bed. To gain a view of this bit of scenery, I established myself on some seats conveniently placed on the roof of the carriages, and I arrived at Spa, at the head of the valley, in a shower of cinders and steam.

The town is small and irregular, and embosomed in hills, a thousand feet above the level of the sea, cold in the morning and evening, and hot and close in the middle of the day. It consists of one long street, by the side of which, at the entrance to the town, is a promenade, shaded by avenues of trees; and further on, at an open spot where the street bifurcates, a plain-looking erection, supported on a range of columns, forming, on a small scale, an open colonnade; this is the Temple of POUHON, and on its pediment is inscribed, “à la mémoire de Pierre le Grand.” At one end of the colonnade is a flight of steps, and at the bottom of the steps a small well, with about three feet in depth of clear water, through

which little troops of bubbles of carbonic acid gas wriggle their way to the surface. The sides and bottom of the well are reddened by a pretty thick deposit of the red oxide of iron, or iron rust. Into this well one or more glasses are dipped by means of a tin frame fastened to a stick, a kind of primitive eruet stand, capable of holding from three to six glasses, and handed by the daughter of Hygeia, who watches over the cool refreshment, to those who come to feast at her mother's temple. I just dropped into the temple when the young priestess was out, and slipped behind the scenes, where I was much amused at discovering a little store of drops of cordial, for those who found the Pouhon strike a little cold to their bosoms. Bah! that must be chloric ether and peppermint; this is ginger drops with a dash of cardamoms; aye, that smacks of eau de vie; then there was a cup of sage leaves for the young ladies to take the stain of the iron off their teeth. But I heard a little stir, and, jotting down a hasty note of my discovery, I quickly vanished, after drinking to my own better health in a bumper of Pouhon.

I was just issuing from under the portico of Pouhon, to go in search of Dr. Cutler, the English physician of the Spa, when I encountered an old friend from London, with whom I made an exploration of the place. First, we visited the shops in which that beautiful work of art, the peculiar manufacture of Spa, is exhibited—a kind of

miniature painting on wood, highly varnished; then we walked through the pretty promenades, so skilfully disposed as to give the appearance of great extent to that which in reality is very small. It was too late to mount the sides of the hills to the many pretty resting places and look-outs that are perched upon their precipitous sides, to induce the visitor to give exercise to his limbs, and help to digest the waters; and we completed our circuit by a lounge through the redoute; that is, the building which contains the reading rooms, gambling rooms, the ball room, and the theatre. The atmosphere of the gambling rooms is always detestable, and the people grouped around the gaming tables equally so; there were women gamblers amongst them, looking hot and eager; I must confess that in my eyes they were more ugly than the poor, embrowned, wrinkled, peasant women, whose fate I deplored in my last chapter. There was a vulgarity about the play too that I had not seen before; the stake was low, a two-franc piece, while, at the more magnificent hells of Wiesbaden and Homburg, brilliantly white crowns and shining napoleons were amassed in greedy and glittering heaps.

The ball room is very handsome, its majestic columns supporting an elegant roof, ornamented with a well-painted ceiling and cornice panels; and its extent admits of being increased by laying a floor over the pit of the theatre. The ceiling represents those distinguished

persons who have at different times visited Spa: the King and Queen of Belgium are of course conspicuous, and the Duke of Wellington. As we sallied out into the street once more, we came upon a procession of small carriages called *Americains*, drawn by strong, well-shaped ponies, a cross between the Flemish and the Spanish horse, and a breed peculiar to the Ardennes. The procession was a party of visitors returning from an afternoon ride on the neighbouring moor, where they sometimes go in considerable numbers. I have called Spa the king of chalybeate springs, and I do so on account of these little horses, of which there are more than five hundred in the town; because they afford a means of delightful exercise without fatigue, a condition of the utmost importance to the recovery of health. They are used equally for riding and driving, and not unfrequently follow the harriers, of which there are two packs, I am told, in the neighbourhood.

“I’ll see you to your hotel,” said my friend. “By the bye, where do you put up?” “At the Hotel de Flandres,” said I. “All right,” replied he; “a very good house. You are much better off than I was when I arrived. I went to the Hotel des Pays Bas; I only stopped a night, and in the morning I had *such* a bill!” “Well,” said I, “and what did you do?” “Why, I expostulated with the landlady, and told her that ‘Murray’ had spoken of her hotel as being particularly reasonable.”

“ Ah !” said she, “ *that* Mr. Mooray, he no business to say the Pays Bas is cheap ; that was my mother who was cheap ; but since I have taken the management of the house, I am not cheap.” My friend added that he had written to Mr. Mooray ; but, lest Mr. Murray should not have received my friend’s letter, I nail the fact to the post here, for all that pass by to read.

In the morning I put my friend Dr. Cutler’s good-nature to the test. I hurried him down from his toilet, while I picked myself a nosegay from the oleanders that formed a pretty avenue at his door ; and then I mounted him on the seat of my little Americain, drawn by one of the strongest, most willing, and sure-footed, and best-conditioned little horses, a true Ardennois, that I had ever seen. I longed to bring him with me to England. “ Stop !” said the Doctor, as we climbed a somewhat steep hill ; for Spa being at the top of the valley, it is impossible to go any further in the same direction without an ascent ; “ stop ; here, my good fellow, hold the pony’s head, will you.” This was spoken in good Belgian French. “ And now,” said he, turning to me, “ I will show you a swimming bath we have just had constructed.” And a superb swimming bath it was, open to the air, enclosed by a low parapet wall and hedge, and supplied by a running stream. “ We have found the want of a cold bath in the summer time,” said he ; “ and we have endeavoured to supply it.” “ You have

succeeded magnificently," said I; "and your visitors may not only lave their arid limbs, in the summer time, but become, if they choose, good swimmers. Now, it is remarkable," I continued, turning towards him, and forgetting for the moment that he was an Englishman like myself,—“it is remarkable,” said I, “that in our country”—meaning yours and mine, dear Reader—“we have no swimming baths; that is, none deserving the name; no schools of swimming; and this is the more extraordinary in a country which itself is little more than a ship surrounded by the sea on all sides. Perhaps our good mother thinks that we must be swimmers by birth; or, perhaps, that the art will come of itself the first time we happen to be dropped overboard. Be it as it may, I think we might swim the better for a little instruction; and I am half inclined to envy the French their schools of swimming, in which, not only the men, but the women, are taught that useful art. An English lady told me that during the summer she had been practising swimming at a French watering place, and that one of the lessons consisted in being thrown into the water, clothed in her usual dress.” “Ah!” said the Doctor, “they do those things better in France.”

Mounting our American, a pleasant drive of about three-quarters of a mile along an avenue of poplars brought us to the top of a hill, where we found the TONNELETS, one of the numerous chalybeate springs which exist in

the neighbourhood of Spa. The chalybeate waters of Spa are cool, brisk, and piquante, resembling seltzer-water, with a distinct flavour of iron. Such was the water of Pouhon, and I found the springs of the Tonnelles to be similar, but containing less iron. Mounting again our American, another ride of about a mile and a half, through a recently cleared wood, and within sight of an extensive moor, and a beautiful distant view of the surrounding country, brought us to a tavern celebrated for its delicious breakfasts; the visitors here declare that no bread, no butter, no eggs, no cutlets, no coffee in the world, can equal in sweetness and delicacy those supplied by this house. Perhaps the morning walk or ride, or that excellent sauce, appetite, may in some way unriddle the riddle. I regretted that I could not prove the fact on the spot; but, on the whole, I felt more interest in two of the springs, which are situated close to the house, the SAUVENIERE and the GROESBECK. Sauveniere, whether intended to mean Savckidney or not I am unable to decide, but it sounds very like it, issues from its rocky bed under a small stone erection, shaped like an ornamental watch-box, and is reached through an arch in the side of the box. The watch-box is placed in the centre of a small paved court, and covered by a wooden pavilion; and on one of the stones of this paved court is the impression of a foot, sunk deeply in the stone, the "pied de St. Remacle." Chalybeate waters in general

possess great powers of making ladies who love their lords, and have not been so fortunate as ladies who love their lords love to be, as ladies wish to be who do love their lords; and the power of the water is rendered certain, by ladies taking the preeaution, when drinking their beaker of Sauveniere, of putting one foot, the left foot, into the impression made by the "pied de St. Remaele." The Doeter whispered this to me in my ear, and I do not hesitate to tell the secret to all whom it may concern, and partieularly to those who do me the honour to read this book. I have heard some good people illustrate a blunder by the remark that they had put their foot in it, and it occurred to me that the footprint of St. Remacle might lead to many sueh blunders; at any rate, I did not fail to put my foot in it, while I quaffed a glass to the health of St. Remaele.

Looking into the little well of the Sauveniere, the gas, chiefly earbonie acid, could be seen rising through it in suecessive troops of bubbles, and the water was piquante and fresh, with but a small quantity of iron, but apparently more than the Tonnelets. Close to the Sauveniere is a kind of altar-pieeee, built against a wall, and in a niche at the bottom of the altar-pieeee is a small well which contains the waters of the Groësbeck. Aecross the upper part of the altar-pieeee is an inscripition stating that this spring was honoured with the erection in question in the year 1651, by one Baron Groësbeck,

whose name it still continues to bear. Though so near to Sauveniere, within a few yards, the flavour of the Groësbeck spring is very different from it; it is less piquante, and contains less salts and less iron.

Again the willing pony and the comfortable American bear us on our way, and a ride of another mile and a half, at a somewhat lower level than the former springs, brings us to La Geronstere. LA GERONSTERE is located in the midst of a wood, cut into ornamental walks, and exhibiting the taste of the landscape gardener. The spring is situated under an oblong pavilion, and is reached by means of a flight of steps, descending to near its level. It is one of the weakest of the springs, containing little iron and least carbonic acid; and is commonly used as a preparation for the stronger waters of the Pouhon, which latter is regarded at Spa as the most important spring. Being estimated light and easy of digestion, La Geronstere is eminently suited to a weak stomach, and conveniently prepares it for waters more largely charged with iron.

Our pony now turned his head adown the valley in the direction of the town, and, after a rough but picturesque ride, we came in presence of a pet spring of Dr. Cutler's, the BARISART. It is situated in a wild spot, surrounded by rude masses of rock, with an elevated pavilion, and will some day, no doubt, become a pretty place and favourite resort. The water contains but little

iron, and is pleasantly fresh and piquante to the taste ; Dr. Cutler prefers it in debility of the stomach to the other springs ; and, no doubt, from containing a minimum dose of iron, it is well suited to that purpose.

We had now made what is called the tour of the springs ; and the tour may be made either from Tonnelets to Barisart, or, in the reverse order, according to the taste of the visitor, or, if he be a patient, the orders of the doctor. The entire tour is not however commonly prescribed ; the directions usually are to take a light breakfast, then a pilgrimage to one or other of the springs, which may be made on foot, or horseback, or in an American, according to the strength of the patient and the nature of his complaint, and then return to a draught of the Pouhon. A ride to the Sauvenerie, a capital breakfast, washed down by a draught of Geronstere or Barisart on the way back, or a beaker of Pouhon in the town, must be a capital medicine. But although I have enumerated no less than six chalybeate springs as existing and in operation at Spa, there are several more ; indeed, if the earth were opened at any point over the whole extent of this district, a chalybeate spring would be found. In the town, a spring rises in the basement of one of the houses, and is employed for baths. The baths of Spa are not yet in a perfect state, but are in progress, and a short time may make them complete ; the water is raised to the requisite

temperature by the introduction of steam into a chamber in the bottom of the bath ; a plan which, properly managed, answers very well. They have also contrivances for the direction of columns of water on different parts of the body, douches, as they are called ; but only on a limited scale.

“ And now to breakfast with what appetite we may,” said the Doctor, catching me in the midst of a reverie. “ I have breakfasted,” said I ; “ I had eggs and coffee at half-past six this morning.” “ But you can eat another breakfast now,” replied the Doctor. And, in truth, I felt the wisdom of putting entire faith in one’s Doctor ; he knew my symptoms better than I did myself, and in fact knew a remedy too. Whether it was the ride, or the bits of scrambling walk we every now and then took, or the chat, or the bracing air of the hills of Ardennes, or the bumper of chalybeate water which I had quaffed at each spring, I did certainly feel hungry, and hunger in no small degree either ; and as I had in prospect seventeen hours of unbroken travel before me, for I was on my return journey, I quite agreed with the Doctor that a good breakfast was a good thing. As we sat down, a gentleman came in from England ; he was on his way to Dresden, and dropped in at Spa as an old home, to see how it looked ; then my friend of last night popped in to look after me ; so that when we drew our knees under the table, we were a *partie carrée*, three

doctors and one civilian. The cutlets were delicious ; then there was some capital ham, then sundry bottles of superb St. Julien, then some excellent coffee ; it was enough to provoke appetite, and all agreed that they had never been so hungry before in their lives. And then, I say it in a whisper, some of us lighted a cigar ; but it was not I, fair reader, I assure you. But you will not wonder that in such good company and in the goodly presence of such a breakfast, I should only be *just* in time for the train.

CHAPTER IV.

AIX-LA-CHAPELLE.

EIGHTEEN hours from London Bridge to Aix-la-Chapelle, with several hours wasted on the journey in stoppages, is not so bad ; at half-past two or three on Friday afternoon I stepped out of the train at the station and descended into the town to the Hotel des Quatre Saisons, in the Theatre Square. I had delivered up my passport to the authorities at Herbesthal, and was to receive it again at Aix, and my sac de nuit, which had been sealed from Calais to Aix, was now to be rummaged. The examination, however, was a mere form ; a gentlemanly youth, turning over some books which lay at the mouth of my sac, enquired if I had any excisable article, to which I answered no, and the sac was immediately closed and the key turned. I gave him my thanks for performing his duty so considerately, and stepped into a cab. I had left London with a bag of kreutzers in my pocket, and I now ventured on the complex financial

operation of converting kreutzers into their value in groshen, to pay my cab fare.

Of all the puzzles on the Continent, the money of Germany is the greatest. In France and Belgium the coinage is good; a decimal coinage, consisting of sous, in copper; half-francs, francs, two-franc pieces and five-franc pieces, in silver; and half-napoleons, napoleons, and double-napoleons, in gold. The franc is a hundred centimes; and a sou, corresponding with the English halfpenny, five centimes; the centime being rarely seen. But the Englishman is a little startled, on his first visit to the Continent, to hear that the price of a peach, on which he has set his heart, is twenty centimes; and, in the impatience of railway travelling, may be naughty enough to exclaim, "Twenty devils! How many sous?" "Four sous, sir—two pence, if you please." And the inflated importance of the centimes looks a little ridiculous also in a washing-bill. Two shirts, seventy-five centimes; one night-cap, fifteen centimes, &c.

The coinage of Prussia is also decimal: copper pfennings, of which ten go to the groshen; and thirty groshen to the thaler. The groshen are made of some indescribable metal, with a wash of silver outside; and when the silver coating is gone, and the impression rubbed smooth, which is not uncommonly the case, it is difficult to determine what they are; and the difficulty is none the less for their being called silver groshen, or, in pure

Prussian, "silbergroschen." Then I had prepared myself to encounter good groschen as well as silber groschen ; but, fortunately, the good groschen are no longer in existence. Their value was greater than the silber groschen, twenty-four going to the thaler, instead of thirty ; but, as may be imagined, they were a fruitful source of imposition upon strangers unfamiliar with the coins. I saw very few pfennings ; groschen, and pieces of six groschen, were the common small coinage ; then there were one-thaler notes, very smutty-looking affairs, but more pleasant to carry than silver thalers ; five and seven thaler notes, and ten-thaler notes ; the latter, as the thaler is equal to three shillings, being equivalent to thirty shillings. Another source of perplexity is the circulation of French money ; so that when I paid my hotel bill at Aix, and laid down a ten-thaler note, in the hope that I should get a good supply of small Prussian money for my Rhine journey, I received in change five-franc pieces ; and I was obliged to go back to my arithmetic to discover that a five-franc piece stands for one thaler ten groschen.

But the perplexity of the varied coinage is so much the more when we travel with speed, and one day find ourselves in the land of francs, the next among groschen and thalers, and a day or two later among the kreutzers and florins or gulden of the German States. Just as I had become an adept in groschen and thalers, I was

suddenly precipitated among kreutzers, sixty to the florin ; the florin being equal to two francs and two sous, or one shilling and eight-pence half-penny. On the whole, I liked the kreutzers ; I selected a good-looking piece, value six kreutzers, of about the size of an emaciated sixpence, and, with the dignity of generosity, I bestowed it on the porter, who had done me some small service in reference to my baggage ; he seemed contented, which was more than I was, when I discovered that my bounty amounted to no more than two-pence ; but two of these pieces were a proper douceur, and three a magnificent one. The kreutzer, something more than a farthing in value, is a very small piece, about the size of a large spangle, and when new and freshly silvered, might pass very well for a spangle, or the scale of a silver fish ; but when the silver is rubbed off, and the impression obliterated, it looks very trumpery. Then there are three-kreutzer bits, which look to me like six-kreutzer bits very much the worse for wear ; indeed, in many instances, the bits may be anything you choose to call them ; at any rate, anything you can get for them. The kreutzers, the three-kreutzer pieces, and the six-kreutzers pieces, are all made of the same indescribable metal as the groschen ; a kind of German-silver*, I suppose. Then there are Austrian coins, representing ten and twenty kreutzers ; but which, in consequence of being silver,

* I am told that the coin is made of copper with a thin plating of silver ; that the metal is rolled to the proper thickness and then stamped out.

and the coinage of Austria being better than that of the German States, are worth, respectively, twelve and twenty-four kreutzers. Whether it is that the German parts with his coin more reluctantly than other people, whether he holds it in a tighter grip, or whether it is unusually rubbed from a quantity of small money being carried together ; or whether it has been a long time in use, not rolling on its edge, but sprawling on its face, it is quite true that the coinage is miserably defaced. I received one morning an Austrian piece of twenty-four kreutzers, very much rubbed, from my landlord, and in the course of an hour I tendered it at the post office. "Good for nothing," said the post-master, as he pushed away the piece with impatience. "But I have just received it from my landlord," said I. "Oh ! it is only at the bureaux that it will be refused," he replied. "But why," said I, "does your Government permit the circulation of a coinage which your offices, or bureaux, as you call them, refuse ?" He was puzzled, and looked me in the face to see if I had the phiz of a gendarme in disguise, and then winked his eye, as much as to say : Our Governments are too selfish to trouble themselves about the people's wants and convenience : besides, the vileness of the coinage is a profitable tax upon strangers. "You're right," said I, "I perceive you to be a man of letters, if not a man of words ;" and I took off my hat, and gave him one of those graceful bows that are to be met

with only in Germany. A few hours later, I tried my twenty-four kreutzer piece at the railway station: "Nicht gut," said the man of tickets; so, putting the piece in a corner of reserve of my pocket, I laid a scheme for its future that was entirely successful.

After paying several visits, and leaving my card on Dr. Wetzlar and Dr. Velten, I joined the five-o'clock table d'hôte at the hotel. There are few places where a man may feel more at home than at a table d'hôte, and no place where a man may feel more lonely. I looked round me as I entered; the party was small; I stared in the face of those who were assembled, and, with a dog-like instinct, saw there were none there whom I could make my friend. An old Frenchman and his fat spouse sat opposite; they were the picture of self-devotion and high feeding. They glanced for an instant coldly at me as I sat down and made them a bow, and then became absorbed in the greasy riches of their potage. I was about to shut myself up with my own thoughts, when a full-blown and fair rose of England sat herself down by my side. This was refreshing; I felt about for a subject, and was soon in deep conversation with her, when my friend Dr. Wetzlar entered the room, and placed himself on my other side. I was just beginning to hum, mentally, "how happy could I be with either," when the Doctor gained all my attention by a few words: "It is now half-past five," said he; "we shall be able to see the principal sources this evening, and more conveniently

than in the morning when the patients are assembled." I am ashamed to admit that in the sweetness of his words I forgot the lady, and, emptying my bottle of bad St. Julien, declared myself at his immediate service. I was not a day old as a traveller, and had not as yet put my foot in the slipper of St. Remacle, but I thought myself old enough to have avoided the blunder which I committed on this occasion, and which I promise myself never to commit again. It was apropos of St. Jullien : I was now in a wine country, and instead of selecting a "vin du pays," as a sensible man and a philosopher in search of knowledge ought to have done, I allowed myself to be led away by old association, and fixed upon bad St. Jullien instead of the excellent Rhine or Moselle wine, the produce of the country. All I can say in extenuation of the blunder, is, that in the long list of wines which was laid before me, I was repeating my experiment of the dinner table ; seeing so many ugly-named strangers, St. Jullien smiled upon me suddenly as an old and familiar face, and I at once offered him my hand and an inside place that would have been better left empty.

Leaving the theatre upon our right, we enter an avenue of globe-headed acacias, where busy life seems to exist in abundant activity ; further on, the avenue increases in dimensions, and, on our left, we have a semi-circular temple-like building supported by columns, and,

on either side of the half-circle, two wings, also colonnaded, which extend for some distance along the side of the street. Entering the temple, and directing our steps towards its chord, we approached a low marble wall, and, at either extremity of this wall, a flight of steps descending some ten feet to a small semicircular area of dark marble; this is the ante-chamber of the famous ELIZA FOUNTAIN. Before us, is a kind of counter, which protects the sacred spring from the intrusion of the curious; and behind the counter, in the lower part of a marble niche, are two pipes, from which issue, in a constant and untiring stream, the thermal sulphureous waters of the Emperor's spring, tumbling from the conducting pipes into an ornamental basin, by which they are secretly conveyed away.

In the upper part of the niche are several shelves, on which are placed drinking glasses of every variety of colour and shape; and on your approach to the counter, a fresh glass of the smoking liquid is handed to you by the nymph who personates Hygeia's handmaiden. You retreat with your glass, by printed request, into the semicircle, or you mount the steps and quietly discuss the reeking potation, and then return the empty glass, either to be refilled, or until, by taking a long walk, you have made room for a second, a third, a fourth, and so on indefinitely, for there is no limit to your absorption of the waters, so long as you have room for more; and the fact

of there being room, shows that they must already have dispersed themselves through your blood and through your system. Epicures in the water, or those who wish to keep an exact account of the extent of their imbibition, have glasses of their own, and having had their beaker filled, they possibly take a turn along the promenade, or in a pretty garden which lies behind the building and is entered by one of the wings. In this garden, whose only fault is its diminutive size, there is a covered avenue for wet weather, and several garden seats for those who prefer to sit while they are imbibing their morning dose, and where they can at the same time listen to the band which plays for two or three hours in the morning and as many in the afternoon. On one of these seats I noted a beautiful and elegant woman, superbly dressed, whose attendant brought her from time to time a bumper of water from the sacred fount; while in a corner I observed a droll-looking creature, apparently made of yellow parchment, stretched over a very bad model of a man, who kept exact time with the music in sipping his glass; once it was a slow tune, and the liquid slipped down in large gulps; then it was a waltz, and the little sips followed each other in one-two-three succession. I regretted that a medical discussion with Dr. Wetzlar on the merits of the water prevented me from making a few pen-and-ink sketches of some of the more remarkable of the devotees, whom the reputation of the Emperor's

spring and Eliza's fount had drawn together to test their virtues. The taste of the water is not unpleasant; saltish, with a flavour of meat, so that it has been not inaptly compared to weak beef-tea, an illusion which is increased by its temperature and by a whitish opacity of appearance. From its warmth and agreeable flavour, it is not unacceptable to the empty stomach the first thing in the morning; it produces a feeling of warmth on the surface of the body, which a little brisk exercise converts into a gentle perspiration; and in a short time the stomach is prepared for a second draught, and, after further exercise, for a succession of draughts. Its action is upon the skin, and the secreting organs of the body, the liver and kidneys; it helps these organs to carry away from the blood any morbid matters the blood and system may contain, and it operates a peaceful reform in the constitution, all these processes being embraced by the medical term *alterative*. It is here that morbid matters, struggling to escape from the system by means of the skin, get a gentle lift; here, impurities of various kinds receive their passport and a notice to be off; here, hard livers become soft, tough livers tender, aching livers painless, and yellow livers acquire a more healthful complexion. Here, also, insubordinate kidneys are brought into subjection; old-established gouts are unseated, and rheumatisms dispersed. All hail! health-giving stream; it is curious that thy progenitors, elements

of destruction, fire and water, should give birth to an offspring capable of healing our inward sores, of restoring lost beauty, vigour, and youth.

The Eliza fountain is dedicated to Eliza, Queen of Prussia, whose bust is placed on a bracket over the niche in which the water flows, and is the principal, I may almost say the only, drinking fountain in the place. The water is also drunk in the hotels which serve as bath-houses ; and there is a fountain behind the Redoute, noted by Dr. Wetzlar as being weaker and lower in temperature than the water of the Emperor's spring, and therefore rarely or never used.

We now turned our steps to the bath-houses, and, in our way, dropped into the Curhaus or Redoute, a fine building, with lofty and commodious rooms, devoted to reading, music, dancing, and lounging. Behind the Curhaus is a garden, in which the visitors sit in the afternoons to sip their coffee and listen to the excellent music provided for their entertainment. Our first visit was to the Hotel des Bains de l'Empereur. It was here that Charlemagne and Napoleon indulged in the soothing luxury of a bath after their fatigues ; the bath is preserved and still shown. In the basement of the building we saw the prolific source of the EMPEROR'S SPRING ; which, besides the Emperor's baths, supplies those of the New Bath-House, the baths of the Queen of Hungary, and the Eliza fountain. Like Charlemagne and Napoleon

I took my bath, and enjoyed it none the less for having no sceptre but my pen, which, being a gold pen, I can slip into my pocket whenever I find convenient, and draw it forth whenever I stumble upon a point worthy of being recorded ; the sceptre, methinks, must be a less manageable article. The baths in the New Bath-House are the best and most commodious in the town ; and I was reminded of an objection started by a lady whom I met at Aix, when I saw the thin pellicle of calcareous matter which floats on the surface of the water, and the soup-looking colour and fragrance of the water itself as I stepped into it. She could hardly be persuaded that one of *my* patients had not been in before her, and left his skin behind him. How wonderful it seemed ; I had but to withdraw a wooden plug from the aperture of a pipe built in the wall of the bath, when, behold ! a copious stream of hot water, upwards of 135° degrees of temperature of Fahrenheit's scale, poured in upon me ; and this glorious stream, not coming from the heated reservoir of a steam-engine, but from the earth itself. Issuing from my bath, I was packed in a warm linen cloak, with warm napkins about my feet, and told to sit still ; and in a few minutes, without any effort of my own, I was perfectly dry. Having thoroughly enjoyed a most delicious bath, I stalked out of my dressing-room, feeling, as Homer has it, taller, and more like one of the immortals, than I was when I entered, and tendered

a small donation to the bath attendant. He made me a magnificent bow, hoped that the Herr Doctor had enjoyed his bath, and was already too much honoured by bathing a doctor of such distinguished reputation—hear that, my countrymen!—to accept a fee. I felt a little uneasy as I presented myself before the lady-superintendent to offer to pay for my bath, having some mystic dread of a watery Apotheosis, when, as I anticipated, the most telling curtesy in the world, and the new bath was already glowing with the honour of receiving and washing the world-wide reputed Herr Doctor from London. By this time, I began to feel the dewy moisture of a sensible perspiration creeping over my skin; and I really shouldn't be surprised, the next time I pay a visit to Aix-la-Chapelle, to find the Neubad converted into Bain de St. Erasmus.

Besides the Emperor's bath and the New Bath, there are, the Bath of the Queen of Hungary; the Bath of St. Quirinus, reminding us of the Romans, and supplied by a distinct spring; the Rose bath, also supplied by a separate spring; and the Cornelius and Charles baths, receiving their water from the Cornelius spring. The greater part of these bath-houses are hotels, where the invalid may, if he desire it, take up his abode; have the drinking-water brought to his bedside, if he be too unwell to rise; and either go down or be carried down to his bath, or take it in his room. In the Neubad

he might, moreover, be alimented from the exeellent table of Mr. Dremel, at the hotel of the Grand Monarque, on the other side of the street, to whom the New Baths belong.

The water in the baths is brought to a proper temperature either by standing to cool or by admixture with cold water; for the douches, the latter process is adopted. There are also vapour baths, both general or local; and for their exhibition, a curious and very primitive apparatus is employed. A round hole is cut in the flag-paving of a little room immediately over a well, through which the water runs, and the steam rushes up through the opening as soon as the lid is removed. Over the hole is fixed a wooden box with a seat, upon which the patient is placed; and he is then shut in, all but his head. The attendant, who led me through the baths, scraped the surface of the bricked chimney, to show me the thick deposit of pure sulphur which forms on all the passages through which the vapour travels; the sulphur was, moreover, coated with a soft, gelatinous slime of organic substance.

After exploring the sources, the fountains, and the baths of Aix, Dr. Wetzlar accompanied me to a suburb of Aix, separated only by the railroad, called Burtscheid or Boreette; and in a hollow, at the entrance of Boreette, we found an extensive colonnaded portico, with a couple of flights of steps leading down to a fountain of hot

water, which spouted out from the side of a rock, against which the building was placed. Near the portico was a large hotel, the Hotel de la Rose; and in the gardens of the hotel, we saw the source of another hot spring, which rushed from the earth with mad impetuosity, and threatened to submerge the entire place. Mr. Hüber, the proprietor of this spring, informed me that he was obliged to use precautions, lest some morning he should find his hotel the victim of a deluge. These waters, unlike the waters of Aix, contain no sulphur. The rock from which they issue is a blue limestone, commonly known as the Devonian limestone. I secured a morsel from the rock behind the pump-room at Borcette, and gazed at it with all the fond admiration that a fragment of the earthen pipkin, in which these glorious waters were warmed up in the subterranean laboratory of Hygeia, deserved.

Turning from the Hotel de la Rose, in the direction of the straggling street of the poor district, Dr. Wetzlar dignifies it by calling it a small town, which is termed Borcette, we came in view of an ancient abbey perched upon a rock; while in the rill of clear hot water which ran by the side of the street some women were washing clothes. Further up, and enclosed by a low wall and broken iron gate, all in a state of decay, is a large square well or pool, termed the kochbrunnen, or boiling pool. From the bottom of this pool, bubbles of gas are seen

streaming up to the surface, which give it the appearance of boiling ; and we are struck by the phenomenon, at once curious and interesting, of a conservoid plant growing in the midst of water of a temperature, when emitted from the rock, of 140 degrees of Fahrenheit.

By this time I had had water enough, and languished for a chestful of fresh air. A drosky, drawn by a pair of small horses, soon wheeled me into a boulevard outside the town, and up an avenue of poplars to a tavern on the summit of a hill, the Lousberg, from which a good view is obtained of the town of Aix and the surrounding country. The top of this hill is laid out as a place of agreeable and attractive resort, and is covered with a grove of trees, through which walks and drives lead in different directions ; at one spot coming suddenly upon a summer pavilion ; at another, on a pretty point of view ; and in a third, on a monument commemorative of the victories of Napoleon. Aix-la-Chapelle itself is built in a hollow, in an undulating plain of small extent, surrounded on all sides by high hills ; hence it is necessarily somewhat close and confined, warm in the winter, but hot and suffocating in the summer ; and the closeness of the situation is increased by a high wall which forms the boundary of the town towards the east. It is rich in its memories of Charlemagne and Napoleon, particularly the former ; there, in that large building on the Boulevard, met the celebrated Council of Aix. Further on, is a

house which served as the head quarters of Napoleon. There is an antique-looking old tower, with a curtained wall running up to it from below, that was used as a magazine of gunpowder during the war ; and on the opposite side, in the midst of a grove, is the Castle of Frankenberg, a hunting lodge belonging to Charlemagne. In the town, the houses are tall, and large, and white, with slated roofs, and have a cold and formal appearance, while the ruinous old cathedral, that contains the tomb and many relics of Charlemagne, rises over all. I was disrespectful enough, when I caught the first sight of the spires of the cathedral and a neighbouring church, to jot down in my note-book : “ funny old spires, reminding one very forcibly of the eccentric ornaments in zinc which one sees in the New Road, between Tottenham Court Road and Trinity Church.” But it is here, and under the dome of the cathedral, that a large black stone, with a brass border, bears across its face, in brass letters, the simple words, “ Carolus Magnus.”

At five o'clock, I was to dine with Dr. Wetzlar, at the table d'hôte of the Grande Monarque. “ What wine will you take, my friend ? ” said he. I remembered the St. Julien, and answered with a ready “ vin du pays.” “ Vin du pays it shall be,” replied he. “ Here, Kellner”—that is, for the illumination of my ungerman friends, Waiter,—“ a bottle of the Doctor.” Any one else in my position might have feared, for the moment,

that he should have stuek before him a bottle of doctor's stuff; but we of the profession know better than that; and I quaffed the first glass with great gusto. The Doctor turned out to be a delicious Moselle, and had the impertinence to bear upon its breast-plate a German verse more laudatory of itself than of the profession whose name it had assumed. I was struck with the easy nonchalance of a table d'hôte dinner. As soon as a certain number of guests had seated themselves, dinner was served; then others dropped in by ones, and twos, and threes, either sinking into familiar places where seats were empty, or continuing the line towards the bottom of the table. The costumes were equally unceremonious; men in the first coat or waistcoat that came to hand; ladies in shawls and bonnets. Then, towards the close, as each finished, he got up and left the table; soon two or three flitted away together, like the bubbles of carbonic acid gas I had just been watching in the Koehbrunnen. Then the majestic lady whom I had been noting in the morning sipping her Eliza drops, got up and stepped into a carriage standing in the square area of the hotel; and then Dr. Wetzlar and I, having drained the last drop of our namesake, also retired, to sip our coffee, amidst bays and oleanders in the area square. While we were thus enjoying our "al fresco" refecton, I puffing my coffee, and the Doctor, not the Moselle this time, his cigar, a servant of the hotel brought us a polite

message from Mr. Dremel, that a carriage was at our service for a turn in the country, if the renowned Doctor from London would obligingly accept it. I must confess that I was ready to accept any thing ; and first going in to thank Mr. Dremel personally for his politeness, and be introduced to a most agreeable French woman, his wife, whose society made me almost forget the carriage waiting at the door, I took my seat by the side of my friend in an open barouche, and was soon flying en princee over the round stones of Aix.

Those round stones of Aix remind me that I was going to remark on the roughness of the paving of the town, and the extreme necessity of being wary of your footsteps, particularly if you happen to have on a pair of tight boots. But in the new streets the inhabitants are obliged by police regulation to lay down a paving stone of black basalt, which forms a footway as agreeable as that of a London street ; nay, in wet weather, more so ; for the basalt being porous, affords a steady footing for the feet, a not unnecessary convenience in a town where many of the streets form the sides of a steep hill. The basalt is much more expensive than the stone found in the vicinity, requiring to be brought from the neighbourhood of Cologne.

Our friend Dremel's turnout was a dashing equipage, worthy of the Grand Monarque ; a handsome carriage, a fine pair of fifteen-hands horses, strong fellows that knew how to use their feet, and a smart coachman with

coekade and good-looking livery. "I will now show you our Cold Baths," said the Doetor; "the only eold baths we have in the neighbourhood." And at about two miles from the town, in the eorner of a garden laid out for the entertainment of pleasure seekers and visitors, was a bath house, in whieh every possible way of shooting water at the body was amply illustrated; shower bath, rain bath, and douches in every direetion and of every degree of foree. "Besides the fountains and baths you have seen this morning, we have also in the town," remarked my friend, "a cold ehalybeate spring; while another spring of a similar kind exists at Boreette."

I was to take tea with some Brazilian friends whom I had known in London, at the seond best hotel in Aix, namely, Nuellen's; the Grand Monarque being the first; and Dr. Wetzlar was to eome in the evening to eonduet us to a Lieder tafel; in other words, to a room in whieh a soeiety of the young men of the place met weekly to amuse themselves and gratify their friends with voeal musie. The guests were seated at long tables extending nearly the whole length of the room, the upper end being devoted to the singers, and refreshed themselves with warm suppers, sparkling moselle, seltzer water, and eigars. All but the ladies, and an Englishman here and there, smoked, and soon the room was pervaded with a eloud of tobaceo, whieh nothing in the world but the admirable singing eould have indueed me to endure. Stop a moment: I had every now and then flashes of

remembrance, like a sharp twinge of the toothache, or that fashionable complaint they call neuralgia, that I was now in Germany, and that if I could not do as the Germans do, that is, smoke perpetually, I ought at least to learn to swallow the smoke and undergo a fit of strangling from time to time complacently. But the Lieder tafel: those who were fortunate enough to have heard the Cologne Choral Singers in the Hanover Square Rooms, know what German choral music is; how can I describe it? it was perfect. We had love songs, and drinking songs, and smoking songs, without any instrumental accompaniment whatever; and then came that which I considered the chef-d'œuvre of the evening, a solo, accompanied by the voices of all the other singers, about forty in number, representing musical instruments. As we walked home in the moonlight, tripping daintily with the point of the toe on the uneven summit of the pavement stones of Aix, I felt very much inclined to break out into a popular song, now become a national anthem among the school children who frequent Bushy Park in long vans in the summer time: "We won't go home till morning." But as the ensuing morning was Sunday, and as I am no singer, and as my song, if I did sing, might be mistaken for the Marseillaise or some other dreadful revolutionary melody; and as I was in company of friends, one of whom was a lady; I thought it best to reserve my song for another day.

CHAPTER V.

AIX-LA-CHAPELLE TO LANGEN SCHWALBACH.

THE weather was hot and oppressive, and longing for some fresh and moving air, I took my seat in the railway train the next morning at twenty minutes past ten, reduced to the last leaf of my book, with the intention of dawdling up the Rhine to Ems. I had scarcely settled myself in a seat, when an English gentleman entered the carriage in haste; and from his remark to a friend who had accompanied him to the train, I found that he was in sorrow. He had just received a telegraphic message from Langen Schwalbaeh informing him of the dangerous illness of his wife, and desiring his immediate presence, and he was now on his way to that place with all speed. I saw reason to hope, from his despatches, that the danger was at least not imminent; and as I was going to Ems, we agreed to go together to that place; when, feeling that I might in some degree comfort him on his way, and perhaps be of use to the

invalid, I offered to go with him the whole distance to Schwalbach, an offer which he gladly accepted.

There was little to see on our way from Aix to Cologne; the day was beautiful, nature was joyous in the glory and repose of a sunny sabbath morning. We looked back on Aix, the Aix of other days, and the old cloister of Borcette, crossed one of the long straight military roads that form a lasting record of the footsteps of Napoleon: Napoleon, his mark; peered down upon the groves and towers of Frankenberg, and were soon in sight of the yellow Rhine, and passing the old portals of Cologne. It is a pity that towns, like men, do not sometimes go on their travels. Cologne looks very grand on the banks of the Rhine, with his bridge of boats, and the crane on the top of his unfinished cathedral tower, reminding one of the mystical sign which a London boy makes with his nose and his outstretched fingers when his presumed rights are infringed; but let Cologne get a letter of identification from his Banker, and a passport from the Foreign Office, and take a short excursion away from his old friend the Rhine, let Cologne go on his travels, and I should like to know what people would think of him, and what he would think of himself. Dirty old pig, says one; why don't you sweep up your streets? says another; why don't you put a dash of your "Eau" on your handkerchief? says a third. Now let us have a look at your papers, says a man in authority.

Pooh ! shut up your carpet bag, old fellow ; it's a little too strong. I can only say that he is the dirtiest old town in Christendom, and only redeemed from everlasting oblivion by his neighbour the Rhine, the old stump of his cathedral that is to be, the tomb of the three wise men, and the world-famed Eau de Cologne. It is said that some of the choicest and most delicate perfumes are extracted by the alchemy of the laboratory out of gas tar, far from a fragrant element in itself ; and perchance the chemists of Cologne derive the charm of their " Eau " from the fumes of their gutters ; just as, they say, the secret of London porter lies in the water of the Thames.

We made our way across the town from the north side near the river, the terminus of the Rhenish railway, to the station of the Bonn railway on the south. Our Jarvie seemed determined to give us a leisurable opportunity to examine the odd turns and twists of the way, the narrow streets, overhanging gables, quaint-looking edifices, the littered market-place ; and we were made painfully aware that our road was none of the smoothest. He seemed to think it hard work to go from one end of the town to the other, about a mile, without some refreshment, and was anxious to pop us down at some hotel, and wait for us until we had strengthened the inner man for the rest of the journey. My only wonder was, that he didn't want to take us to some real and original and hitherto unknown source of Eau de Cologne ;

for that is one of the eccentricities of the place, and the guides to the best shop for purchasing the Eau merveilleuse are a real nuisance ; fortunately, being Sunday, we escaped their troublesome solieitude.

Having secured places to Rolandseek, we endeavoured to obtain some information as to the possibility and the means of reaching Schwalbach from Coblenz ; but we could gain none ; we only made acquaintance with a peculiarity in the German character, which is, to know nothing. This peculiarity I had ample opportunity of verifying in my after journey, and found it advantageous, wherever practicable, to see for myself. At last the train is in motion, and we are dashing away from the Rhine and Cologne, to meet the former again at the end of a curve which the railway makes through a somewhat flat but beautiful country. We pass the chateau of Brühl, where visitors from the town are wending to spend an afternoon among its pretty grounds. We see a long avenue of poplars and the flexuous line of the Rhine on our left, a low mountain ridge on our right, and every now and then catch a peep of the Seven Giants of the Rhine, with the castled heights of Drachenfels in their front. In less than an hour we are at Bonn, quiet-looking Bonn, with its tall cathedral spires of beautiful simplicity. On our right, near the station, is an abbey-looking building in course of erection, the “ folly ” of some rich man ; and, farther away, at the end of an avenue of tall trees,

the chateau of Bonn, with the heights of Popplesdorf peering above ; while, on our left, is the demure and somewhat melancholy-looking University. From Bonn to Rolandseck the country is still more beautiful than on the other side, and we are on the alert for pretty views ; we are nearer the river, which one while approaches, and another while recedes, as it makes its serpent-like way to the Ocean. On our right, we pass the graceful hill and ancient castle of Godesberg ; across the river, we see Königswinter, so late the travelling residence of the future hope of England, Baron Renfrew, our well-beloved Prince of Wales ; and behind Königswinter are the seven mountains of the Rhine, now seen in all their grandeur, Dräehenfels, the dragon rock, with his precipitous front and castled crags in advance, and his six dreamy brothers behind, only dreadful when the spirit of the storm settles on their gloomy heights. These mountains were not unfamiliar to my eye, and as little to my heart. Byron had fixed them inseparably on the latter ; and in my boy days, full of latin and geology, I had explored their inward structure and most dangerous pinnacles. We soon passed under the lovelorn ruin of Roland's Tower, and in a few minutes were wheeling along upon a magnificent terrace by the side of the Rhine ; a terrace which in a short time will stretch its way to Coblenz, and from Coblenz along the shore of Nassau to Mayence, to Frankfort, and thence, if it like, to the antipodes.

We had now to wait for the steam-boat, which left Cologne soon after our arrival there, and devoted ourselves in the mean time to an excellent dinner in the little tavern at Rolandseck. There was some stewed hare, which, in the spirit of enterprise, I selected, and was a successful hit; and some excellent wine that recommended itself to my attention under the name of mother's milk: Poor Power, the comedian, used to say, "tokay do you call it, I wish I had a bunch of such kays!"—and Liebfraumilch made me regret that I had ever been weaned. Dinner over, I repaired with my friend and bottle to a little terrace where we could look forth upon the Rhine. Whether it was the Liebfraumilch or a bit of real sentiment, I hardly know, but I thought I had never seen anything so beautiful before in my life. Looking back in the direction we had come, the Rhine was changed into a magnificent lake; on the right was the Draehenfels with its train, on the left the hill of Rolandseck, with its ruined arch, looking like grim sentries watching the pass of the Rhine; while, bedded on the yellow flood and closing the distance, was Nonnenswerth with its cloister. To give life to the scene, one of those light boats so peculiar to the Rhine wafted along by means of a paddle, floated on its bosom, while a wood-raft more than half a mile long, with its wooden houses, and its crew of thirty or forty men, was seen in the distance moving down the stream. I had just given myself up to the thorough

enjoyment of this lovely scene, when a streak of blue smoke in one of the channels by the side of the island reminded me that "On, on" was for the present our destiny. We paid our reckoning, and then began to enquire about our baggage, which had not yet been brought from the railway station. We scrambled up to the station, and were received with the utmost coolness; it was in vain that we protested that the steamer was at the wharf, and that there was no time to lose. Yah, yah, was all the answer we received; and, seeing the hand-carriage in motion on which our goods were piled, we hurried down to the boat. We might have saved ourselves the trouble, for it was a full half-hour before the Rhine-boat uttered the tinkle of its bell, which was the signal for its departure.

We enjoyed the beautiful scenery of the banks of the Rhine as long as the daylight lasted, and then we were fain to draw our cloaks about us, and wish ourselves at the end of our journey. The Rhine presents many phases of beauty in its course; below Cologne it is unendurable; it is of no use trying to be animated with the remembrance that at Dusseldorf there is a fine school of painting, while at Gräfrath there lives a celebrated mender of eyes; not far from Solingen, where there is an equally clever contriver for putting eyes out, in the shape of a fencing foil manufactory; nothing will do, the Rhine is cold, and flat, and stupid, and only wants

crocodiles to make it complete. Then between Cologne and Bonn there is nothing to be seen ; while at Bonn, the seven mountains appear with Königswinter at their foot, Godesberg on the opposite plain, and in front, the island of Nonnenswerth flanked by the Draehenfels and Rolandseck, with the ruin of Roland's tower on the summit. So that we lose nothing, but rather gain by embarking for the upward journey at Rolandseck. But the most picturesque, if not the most beautiful, part of the Rhine begins where we end to-night ; namely, at Coblenz ; from thence up to Bingen and Mayence. Above Mayence to Bâle and the Falls of the Rhine, there are no beauties to attract particular attention. It must be admitted that there is a sameness, even in the Rhine, that neither spoils your appetite nor keeps off the disposition to sleep. On the right bank, the south, there are the round, beech-covered, green-looking hills, ranged in graceful disorder, with that wonderful work of man's ingenuity and industry, the terrace for the railway at their feet. On the left-hand bank, the north, the bare rock is apparent, with a southern aspect laid out in a manifold succession of terraces, and covered with grape vines from the brink of the stream to the highest accessible point. The rock is red sandstone ; and the variety of distribution of the vines, and the economy of the nooks and eyries of the rock, are curious to behold.

A bright moon peeped out from behind a patch of

dark eloud, like a Spanish lady from behind her fan, as we came in sight of Coblenz, the stars shone out in radiant beauty, our home constellation, the great bear, that spreads his long tail across Welbeck Street when I reach my own threshold late in the evening, and now gave me a fluttering remembrance of home, told me where I might look for the north. In a few minutes, the twinkling lights of Coblenz were close on the water's edge, the long line that marked the bridge of boats could be distinguished; here was the blue Moselle mingling his flood with the yellow Rhine; and then above, towering in the sky, were the dark heights of Ehrenbreitstein, the memorable scene of Mr. Ledbury's love adventure, so wonderfully told by Albert Smith. The steam-boat rings its bell, musical in the stillness of night, and we are soon in the midst of bustle and confusion, hurrying away along the thronged wharves of Coblenz to the Hotel de Geant.

"A carriage and pair for Langen Schwalbaeh immediately; shall we find relays on the way?" "Yes, but the carriage will take you there if you choose." "No, we should prefer another carriage and fresh horses at Ems." "Oh! that you can have;" uttered in a way that conveyed to my ear the idea, that you won't have; my friend also had his misgivings, but we tacitly made up our minds to see how the matter would clear itself up. The light open barouche was rather pleasant than other-

wise, at half-past nine, when we started from the door of the Geant; but before we reached Ems we felt that an inside place would be more acceptable, and we were not sorry to remember that we were to have a fresh carriage, of course a close one, at Ems. Our plans so far mentally arranged, we crossed the bridge of boats and entered Nassau; the road led us for some distance by the side of the Rhine, then we had an indistinct glimmer of the castle of Stolzenfels, and saw some strange-looking lights peering down upon us from the shadows above, from the towering castle of Lahneck. Who can be sitting in the blaze of those lights? What tragic remembrances they conjured up of the ancient knights, the magicians and the wizards of the Rhine! and rumour had lately been telling strange tales of Lahneck, the cousin *german* of Stolzenfels, as I find it called in a copy of "La Presse" now before me. The castle belongs, says my authority, to Lord Moriarty, a rich Irish nobleman; within its encircling walls, now rising from their state of ruin, at the beck of this powerful lord, is a chapel that was burnt to the ground in 1688 by Marshal Boufflers. Its architecture is Byzantine, and it possesses a bull of indulgence, granted in 1332 by the Pontiff, John the Twenty-third. By daylight, as I can vouch, Lahneck is very imposing, and scarcely inferior in grandeur to its neighbours, Stolzenfels and Marxburg.

We now approached the winding Lahn, sometimes

taking our course by its side, at other times meeting it abruptly in face; by the light of the moon, glancing on its waters, and throwing into deeper and more sombre shadow the hanging woods and steep hills by which we were surrounded on all sides, and through the furrows of which we were now travelling, the scenery was very beautiful and picturesque. At a sudden turn of the road, we came upon some smelting works which threw the blaze of their red and greenish fires fitfully around them, and contributed an additional wildness to the scene. Soon, in the very midst of the narrow valley, we reached the tall white buildings, the promenade, and the Curhaus of Ems, and drew up before the ducal post-house. The coachman descended from his perch, and then the secret could be kept no longer; he either chose to knock at the wrong door, or he could make nobody hear; but after waiting for some time, he modestly told us that he must take us on. At that hour of the night, and with a very small stock of German between us, there was no discussing the matter with our driver; on the contrary, I must confess that I felt it a comfort that he didn't turn us out on the rough pavement, and tell us we must camp there for the night. But as he seemed to have some idea in his head of reaching his destination some time or other, by hook or by crook, we were content to wrap ourselves up as warmly as we could, and to his unintelligible explanations respond by a sonorous, yah, yah.

We still kept our way by the side of the Lahn, catching sight, as we advanced, of a curious old tower on the summit of a conical hill; and then, at a bend of the road, came suddenly on Nassau. At Nassau, we crossed the pretty Lahn by a suspension bridge, and pulled up in front of a way-side public-house, where the horses were treated to an hour's rest, and were supplied with their supper. Our horses, like most of those I have seen in Germany, are small, active, strong, willing, and sure-footed—qualities very necessary where there is no division between the road and the fields, and where very frequently the road is an elevated terrace, with a deep fosse on either side, or where it forms a kind of shelf, over-hanging a precipitous ravine. Their endurance is remarkable; they had now on hand a journey of thirty-eight miles, which they accomplished without any extraordinary fatigue, never flagging for a moment, and yet much of the road was rough and rocky, and a continued succession of hills, some very severe, like that by which we quitted Nassau and began the ascent of the Taunus range, a hill at least two miles in length. They were, no doubt, aided in their work by the kind of refreshment which they got at the two halts they made on their journey—namely, a large loaf of brown, sour-smelling bread, cut up into small bits, which they ate with great delight. My fellow-traveller told me that he had seen horses in Switzerland which journeyed the

whole day with scarcely more than an hour's rest, and were treated in a similar manner—a loaf of brown bread, washed down with a small draught of water mixed with oatmeal. I did not observe that our horses obtained any water.

Having mounted the steep and long ascent that leaves Nassau behind and reaches the plateau of the Taunus, we had for the rest of our journey a continued succession of ascents and descents, sometimes passing through a flat, dreary country, where no habitation occurred for miles; then, as we reached a lower level, through apparently endless forests of beech and pine. My belief in there being any Schwalbach at the end of our journey began to waver.

The monotony of the road was a little too much both for man and horse. The brim of my fellow traveller's hat came every now and then against my shoulder, reminding me that he was in the arms of the drowsy god; then, to my concern, the coachman began to nod, and almost precipitated himself several times on his horses' hips; and then the horses, seeing no prospect of more brown bread before them, began to be sleepy too. I, also, must confess to occasional gleams of forgetfulness; but, not liking the look of the deep hollow which yawned at either side of the road, felt in duty bound to keep at least one eye open, if I slept with the other; and so I was enabled, from time to time, to remind the coachman

that his horses were standing still, or that, worse than standing still, they were so near the edge of the road as to peril our safety ; or that he himself would in an instant be enacting a somersault upon the pole. And then, at that elevation, the night was very cold, particularly among the damp, chill beech forests through which so much of our journey lay. At last, the forests were passed, and a glow in the horizon promised the waking of the ever-watchful sun. Glorious sight to behold him bursting into resplendent life from behind one of the high peaks of the Taunus, the Great Feldberg ; and then to see the scattering mists, one while dissolving into shadowy clouds, at another driving across our road as we passed one of the hollows on our way, like a showery mist. Far away among the hills, the dewy vapour looked like a majestic glacier ; in another spot, it resembled a wave-tossed sea, on which one looked in vain for ships ; in a third, the hollow between two spurs of a broad mountain looked choked with snow ; while here, before us, was a streak of fog that seemed to fill to overflowing a long, narrow, crescentic valley. "There is Schwalbach," exclaimed our coachman ; and shortly, through the dense mist, I could distinguish the mass of houses. As we descended the side of a precipitous hill, the spire of a church was perceptible ; then large white houses ; and, as we completed a series of zig-zags down the face

of a bare hill, Schwalbach ceased to be a myth, and became a bright reality.

I suppose, while the earth is the earth, we must not complain of mists; and mists will still continue to rise so long as there is moisture in the earth, and particularly in the vicinity of lakes and streams of water; and, further, that while we sleep, it does not much concern us whether the atmosphere without be loaded with moisture or dry. But I must confess, at my first view of the coverlet of mist under which Schwalbach lay sleeping, looking down upon it, not precisely like the man in the moon, but from the region of the sun, my expression was, Alack! poor people. Perhaps it was the pride of finding myself up, or, as the French have it, *assisting* at the levée of the sun; I think it was; but certainly my beau idéal of a healthy dwelling-place is not the hollow of a valley.

CHAPTER VI.

TAUNUS MOUNTAINS.

To the traveller in search of mineral springs, and to the invalid in pursuit of health and strength, the mountains of Taunus have a peculiar interest. They are part of a great chain, which, beginning on the Meuse, in the western part of Belgium, stretches in a north-easterly direction across Rhenish Prussia, Nassau, Hesse Darmstadt, Hesse Cassel, and Westphalia, to the Weser. I have before remarked that these mountains, like the greater part of the mountains of the world, result from an upheaving of the crust of the earth, accompanied by a bursting of the crust, through which oftentimes the contents of the interior are thrown upwards on the surface. The same actions bring into view the deeper part of the crust, and teach us its nature; while we are, at the same time, made acquainted with the successive strata which overlie the deeper part and the order of their super-position. In the deep portion of the crust,

is contained the mineral wealth of the earth ; while in the upper layers are found the sources of the mineral waters. This mineral wealth, and these valuable sources of mineral waters, exist therefore in every part of the world, but, in the normal state of the earth, at too great a depth to be useful to man ; it required the operation of those great natural phenomena, volcanoes, to break through the crust, to lift the deeper portions to the surface, even to force through the opening the molten rocks of the interior, to place them within our reach. We are now in a region where this grand disruption has taken place, and we see busy man availing himself of the riches placed at his command. He holds his coloured cup of Bohemian glass daintily under the unceasing stream of steaming mineral water at Aix-la-Chapelle ; he drinks it cold, after a joyous and exhilarating ride, at Spa ; and he bathes in it, after the weary labours of the day, at Chaudfontaine.

At Kreuznach, still to the south of the Rhine, in the neighbourhood of Bingen, we shall find him extracting a remarkable substance, Bromine, from the water ; while he delves the solid rock for mill-stones and quicksilver. In Nassau, we see him drinking the waters, exporting them to foreign lands, bathing in them his weakened limbs, extracting from them commercial salt, and, as we saw in our nocturnal ride along the valley of the Lahn, smelting the rock to procure valuable metals. In one place, he gathers magnificent agates and amethysts from

the soil ; and, throughout the range, converts the hard rock into the means of building his castles and palaces, his bridges and his railroads, and paving his streets. I mentioned that, at Aix-la-Chapelle, an order of the police required the foot-pavement to be made of basalt—a volcanic formation, a kind of lava in fact, which, in a fluid state, was forced through the broken crust to the surface of the earth, and has then become cooled into a black porous rock. Basalt is found in many places on the Taunus chain.

The low blue range which we see at a distance on our right, after quitting Aix, and again in our run across the pleasant plain of Bonn, checked by the Rhine at Rolandseck, and rising into grim magnificence on the opposite side of the river, in the seven mountains, is the north-western boundary of the great mountainous chain I am now attempting to describe. While in our journey from Rolandseck to Coblenz, we cut the western half of the range in two ; or, rather, we take advantage of the victory which old Rhine gained over this mountainous fence when he burst his way mightily from the basin of Mayence at Bingen, and thence to the Siebengebirge. This, then, is one of the Rhine's military roads ; and soon he is to have a railway bracketed up along his southern shore. We laugh when we see a troop of mice running along a shelf ; we may smile when we see busy man careering along on a pigmy terrace by the side

of the Rhine, in a long painted box, hurried on its rapid course by a steaming, fretful, screaming tea-kettle on wheels. To the geologist and the naturalist, therefore, the precipitous boundaries of the Rhine are not only interesting for their variety and eccentricity of shape, their picturesque beauty and savage wildness, their bushy knolls and cool refreshing slopes on the south, and their ingenious and successful cultivation on the north; they are also interesting for the "writing on the wall," which only the lover of science can read, a legend that tells him the cause of these rocks, their natural relations, and their purposes.

The Taunus mountains are that portion of the great mountain chain which occupies the eastern half of the Duchy of Nassau, bounded to the north and west by the Lahn, to the south-west by the Rhine, to the south by the Maine, and terminating abruptly on the north-east in the Duchy of Hesse Darmstadt; its length being about 50 miles, by about 20 miles in breadth. The crest of this mountainous mass takes its origin at Johannisberg, near Nauheim in Hesse, and thence follows a south-westerly line to Assmannshausen on the Rhine, a little below Bingen; indeed, it is here simply intercepted or severed by the Rhine; for, on the opposite shore, it is continued onwards under the name of the Houndsback, Hundsrück. This mountain crest throws up numerous peaks in its course; for example, Herzberg, Rotheberg,

Bleibeskopf, Altkönig, Greater and Lesser Feldberg, Glaskopf, Trompeter, La Platte, Hohewurzel; and it is to this elevated portion of the range that the term Taunus mountains is especially applied; this is the "imperium in imperio." It was from behind Great Feldberg that I saw the rising sun peeping this morning, when we were climbing our weary way up the northern face of the range in the direction of Langen Schwalbach, and witnessed in this airy region his combat with the spirits of the mist. With the old king, Altkönig, I made acquaintance, a few days afterwards, in my journey from Soden to Homburg, and nodded a good night to the old fellow from my bed-room window in the Hessian Hotel at the latter town.

The ridge above and between Wiesbaden and Homburg, as the highest part of the mountainous range, is therefore emphatically the Taunus, the culminating point lying to the north-east, between Soden and Homburg, and consisting of the two Feldbergs, Greater and Lesser, and the Altkönig. The elevation of these three mountains above the sea is respectively 2721, 2482, and 2449 feet. Above Wiesbaden are three mountains of lesser altitude; namely, Hohewurzel, 1781; Trompeter, 1483; and La Platte, 1418; these constitute the middle region of the Taunus. Further to the west, the mountain crest is fissured by the Rauenthal valley, at the point where Schlangenbad has found an eyrie nook; and

from this to the Rhine at Assmannshausen and Rüdesheim, the erest gradually subsides, and reeeives the name of the Rheingau or Rhine distriet mountains.

Now, if my readērs will just have the kindness to imagine they are the victims of an earthquake; and that, as the eonsequeene of some unseen operation going on within the earth, the erust of the earth is being gradually lifted up, until—dear me! what's that?—why the top erust of the pie has eraeked in pretty nearly a straight line, from Assmannshausen to Nauheim, going elean through Wiesbaden, elose to Soden, and through Homburg. Well, how remarkable! Now, reader, I want you to imagine one side of the erust to remain up, so as to show its broken edge. Well, that is the erest of the Taunus, with its broad back, spreading away, up hill and down hill, and as uneven as the top erust of a plum-pie, to the Lahn; while the other side drops down to almost its original level. This is the hilly plain extending away from Rüdesheim to Hesse, and sloping from the brink of the fraecture to the Rhine and to the Maine. Now, reader, if you have had the patience to follow me in my representation of an earthquake and its consequeenes, I will next tell you what you might not otherwise so easily understand; namely, that all along the line of this tremendous craek, and nowhere else, the salt springs for whieh Nassau is so remarkable issue from the earth; some eold and some, like those of the

Koehbrunnen at Wiesbaden, seemingly boiling hot. That one of these salt springs, strange to say, bubbles up in the middle of the bed of the Rhine at Assmannshausen; that there is another near Eltville; a third, nay, twenty-nine, sources at Wiesbaden; a fourth, fifth, and sixth, close together at Soden, Neuenhain, and Cronthal; a seventh at Homburg; and an eighth at Nauheim; while along the whole of this line are rocks of Basalt, which serve to remind us that the crack in the earth's crust that called into existence the salt springs, also gave exit to the molten rocks of the fiery furnaces within.

On the south, or rather the south-eastern side, the Taunus has been described as consisting of three terraces. The highest terrace, in other words, the crest of the ridge, which represents the deepest part of the earth's crust exposed to view, is composed of a rock, next, in the geological series, to a primitive rock; and thence termed a transition rock, as forming a link between the primary and secondary rocks. It is composed chiefly of fragments of quartz, held together and consolidated by rock of a similar kind; and is termed quartzite. The second terrace consists of a peculiar rock, stratified and quickly decomposing when exposed to the weather; this is the Rhenish shale. While the third or lowest terrace is composed of tertiary formations. In the quartzite rock only one mineral spring is found; namely, that of Sehlungenbad. From the Rhenish shale, proceed the

saline springs ; while the tertiary strata give issue to the sulphureous springs of Weilbach, Nied, and Frankfort, all of which are situated near the Maine.

The chemical examination of these several rocks and geological formations, elicits the fact that the composition of the mineral waters is dependent on them ; that they, indeed, contain the mineral and saline elements which give to the springs their especial character. Therefore, at the present day and with our present knowledge, we should not have to wait until a mineral spring was accidentally discovered to determine its qualities and uses ; but, with the aid of geological and chemical knowledge, we may certainly predict, firstly, that in a given combination of rocks, a spring of mineral water might be found ; and, secondly, we may determine, before hand, what the chemical composition of that water will be, and to what uses it may be applied ; in other words, to what diseases it will be suitable.

The mineral waters of the Taunus are all referrible to four heads, according to the presence of one of four principal constituents ; namely, muriate of soda, or common table-salt, which forms the basis of the *muriated saline waters* ; carbonate of soda, giving rise to the *carbonated saline* or *alkaline waters* ; iron, to the *chalybeate waters* ; and sulphur, to the *sulphureous waters*. Then, in one spot only, namely, Wiesbaden, the muriated saline waters are thermal as well as cold. I have already

indicated the line in which the muriated saline springs are found, namely, at the south-eastern foot of the mountains; I have also indicated the position of the sulphureous waters, namely, in the bed of tertiary strata which constitutes the plain near the river Maine. Iron is a metal so universally distributed as to be met with in most of the other waters; its absence is exceptional; but there are certain situations, as in the rocks of Spa, and in the grauwacke or sandstone of the Rhenish rocks, where it becomes the chief constituent of the mineral springs. Soda is another of the most abundant of the elements of our earth, as we may infer from its presence in large quantity in the muriated saline waters; but its existence without muriatic acid is less frequent, occurring chiefly in the quartzite rock, as at Schlangenbad, or in the basaltic rocks of the north-western declivity of the Taunus.

We have now to regard the Taunus in reference to the streams of water which gather among the high valleys of its uplands, and wash themselves a course down to the main rivers of the country, forming in their passage so many valleys of greater or less extent and regularity. All these mountain streams, with the exception of one, run at right angles to the crest of the Taunus; some descend on the south-east to the Maine and Rhine; some on the north-west to the Lahn; while the exceptional one, the Wisper, takes its course in a south-

westerly direction to the Rhine, from the Rhenish extremity of the mountains, and empties itself into that river at Loreh. And it is to be observed that these streams are the pioneers of the mineral springs, opening the way to their discovery and to their exit from the earth; the majority of the mineral springs being found issuing from the rocky boundaries of the valleys cut by the mountain streams. Thus the mineral springs of Nauheim are found in the valley of the Usa; those of Homburg, in that of the Esehenbaeh; and those of Soden, Neuenhain, and Cronthal, in the little valleys which transmit the streams that unite to form the Sulzbaeh; all these little rivers falling into the Nidda, a tributary of the Maine. Falling into the trunk of the Maine, we have the Liederbaeh, Schwarzebaeh, and Weilbaeh. The Schwarzebaeh takes its rise by several rivulets in the hollow between the peaks of the higher and the middle Taunus; and, making its way by Eppstein and Hofheim, terminates in the Maine near Hattersheim. The valley of this little river is remarkable for its picturesque wildness and beauty, and has been termed the Switzerland of Nassau. The Weilbaeh empties itself at Flörsheim; and is the guide to the Weilbaeh sulphureous springs.

Opening into the Rhine still from the south-western declivity of the Taunus, are the Salzbaeh, with its brackish waters from Wiesbaden, the Waldbaeh from Schlangenbad

and the Rauenthal; and the Mühlbach from Eltville. Farther down the stream, namely, at Lorch, the Rhine receives the Wisper, from its beautiful and picturesque valley, the Wisperthal. The Wisper takes its rise in the high valleys and table land at the back of the Rheingau mountains, reaching to the hills of Langen Schwalbach; in its course it makes its way through a mass of basalt; and the rocks which bound its valley give birth to several mineral springs. Near its mouth, it receives the brook of the Sauerthal, or Sour Valley; so named, no doubt, from the acidity of its waters, caused by the presence of carbonic acid. In the small stream which opens near the Marxburg at Braubach, other mineral springs are found; and we are reminded of their existence by the name of one of the tributary streams, namely, Heilbach, or Healing-brook; and at the neighbouring Lahnstein also, mineral waters occur.

In the valley of the Lahn are the carbonated alkaline thermal waters of Ems; and the cold carbonated saline and chalybeate water of Fachingen; while on two of the most important of the tributaries of the Lahn, the Aar and the Emsbach, are found the chalybeate waters of Langen Schwalbach, and the carbonated saline waters of Nieder Selters. Two other small rivers open into the Lahn in the neighbourhood of Nassau, the Dörsbach and the Mühlbach. The valley of the Dörsbach is so narrow as to be almost a ravine, down which the stream

rushes with impetuosity ; and upon its sides are several mineral springs ; while other mineral springs are found in the little valleys of the tributary streams of the Mühlbach. No less than one hundred and forty-six mineral springs are already known as existing in the Duchy of Nassau, while others are constantly being discovered.

But although the springs of Nassau are so numerous, a few only can be named that have secured and retained popular favour, either from the intrinsic merits of the waters themselves, or from the beauty and charm of the scenery, or other conditions conducive to health. The more fortunate amongst them are, Wiesbaden, Ems, Langen Schwalbach, Schlangenbad, Homburg, Soden, Fachingen, and Selters. The waters of the two latter, namely, Fachingen and Selters, being chiefly used for exportation.

CHAPTER VII.

MINERAL SPRINGS OF THE LAHN.

EMS. FACHINGEN. SELTERS. GEILNAU.

SINCE Lord Moriarty, whom I am proud to call my friend, for his qualities of heart and mind, let alone the new mundane dignities which have fallen upon him gracefully, like the robe of clouds which shelter his eyrie castle of Lahneck ; since, I say, Lord Moriarty has perched himself on one of the mountains of Taunus, lighting up his windows at night as a beacon to guide the approaching traveller, filling up his dungeon cells with the richest juices of the Rheingau and Moselle, and spreading the proud banner of Britain to the wind when his Lordship is in residence ; since, I still say, Lord Moriarty has become so distinguished a part of the natural features of the Western Taunus, I do sincerely trust that he will benignly revise the nomenclature of the towns, the villages, and the brooks of Nassau ; that with the genius of his native land, rich in euphonious sounds ; I am not now thinking of Cork, nor do I care to dwell

on his "et tu, Brute," when he reminds me of the eternal stupidity and repetition of names in the street and square nomenclature of London, and particularly in its suburbs; the street organ nuisance always grinding the same tunes, or at least the same words; he will, with the briefest dash of thought and pen, and deeper vaults of his throat, for he pronounces the language, indeed every language, like a native, rechristen the nooks that live only on the borrowed plumes of their neighbours. Let him forget his own "ruins" for a while and do this, and he will deserve the everlasting thanks of future historians. For example, what can be more tiresome than to find, when one searches the chart for Ems, not one Ems, but four Emses: first, there is Bad Ems, that is, the Baths; secondly, there is Dorf Ems, that is, the village of Ems; and then there are two Emsbaechs or Emsbrooks, namely, that by which the village is built, and another and more important one higher up the Lahn, on the rocky banks of which is found the important spring of Selters, or Nieder Selters.

The mineral springs of the Lahn are two in number, and of considerable celebrity; namely, Ems and Fachingen; while, on the tributaries of the Lahn, the Emsbaech and the Aar, there are met with the famous source of Selters, supplying the Seltzer water of commerce, and Schwalbaech; or rather Langen Schwalbaech, for of Schwalbaechs, as of Emses, there are several in the

Duchy. These four celebrated sources, with many others of less renown, spring from the north-western slope, the plateau of the Taunus, as it is commonly termed, taking their origin in the Grauwacke or Rhenish Sandstone; and therefore they present a general similitude in chemical composition. All are largely charged with *carbonic acid gas*. Fachingen contains most, namely, nearly thirty-three cubic inches to the pint; and Ems, least, namely, twenty cubic inches. This acid gas gives to the Schwalbach, the Selters, and the Fachingen waters an acidulous taste; but the waters of Ems being thermal, the acidulous savour is lost, although a fair amount of piquancy remains. All four contain *bicarbonate of soda*; two in large proportion, namely, Fachingen and Ems, which hold respectively twenty-eight and twenty-one grains to the pint; Selters, in moderate quantity, namely, less than ten grains to the pint; and Schwalbach least of all, namely, less than two grains. Therefore, in grouping these waters together under the head of *carbonated alkaline waters*, the first two can alone be taken, namely, Fachingen and Ems; while Selters and Schwalbach must be omitted, from containing so small a quantity. All likewise contain muriate of soda; namely, Selters, seventeen grains; Fachingen, four grains and a half; Ems, two grains; and Schwalbach, one six-hundredth of a grain, to the pint; therefore

Selters may be taken as a *carbonated muriated saline water*. Again, all contain carbonate of the protoxide of *iron*, or its representative manganese; Schwalbach, four-tenths of a grain to the pint; Fachingen and Selters, one tenth; and Ems, a trace of iron and manganese; therefore Fachingen, besides being a carbonated alkaline water, is also chalybeate. In the water of Ems, the iron is overmatched and subdued by the soda, and therefore merely acts as a tonic ballast to the more active properties of the water; in the waters of Selters, as is well known, the iron is deposited on the inside of the earthen bottle in which it is exported, and is altogether gone before it reaches the lip of the drinker; while Schwalbach alone, from the lesser quantity of carbonate of soda and abundance of carbonic acid, bears the test of the sifting, and remains on the sieve, as the type of a pure chalybeate water, worthy of being ranked with Spa, Bocklet, and Brückenau. One other feature is presented by the four sources now under consideration; Ems issues into existence in the lucky spot at the foot of the mountains, where, as in the case of Wiesbaden, the spout of the subterranean tea-kettle comes to the surface, like a whale spouting for air, and the water is consequently thermal, varying from 90 to 128 degrees of temperature; the rest originate higher up on the Taunus, and are all cold.

And now a word for Ems; Ems, anciently Eimetz,

is a mineral spring of very ancient celebrity, and was known to the Romans; as what did they not know? Those Romans whom we are obliged to know at school, and hate all the more for knowing; whom we know only as the originators of school-books, or, if not of school-books, of acts and doings with which school-boys must be acquainted during the liveliest period of their existence; and it has been inferred that, because these waters were known to the Romans, that the Romans, by consequence, must equally have known their medical virtues; but, as appears to me to be more than probable, their knowledge went little further than the convenience which they found in having their camp-kettle boiled for them instead of taking the trouble of collecting sticks to boil it themselves; and then, perhaps, their instinct may have carried them a step further, to wash themselves in the pleasant water after they had finished their meal, and not think the worse of themselves for their bath. Well, the Romans founded a station on the spot now occupied by Ems, and the station founded a colony; and coins, and bits of arms, and bricks, and tiles, and mortar, are found to the present day, to add their witness to the tale. Lord Moriarty, I am informed, has many of these treasures of antiquity in the museum of his castellum, on the summit of the Lahnstein.

Ems is situated in the most picturesque part of the Lahn Valley, seven miles and a half from Coblenz, and

reached by a most charming road; one while advancing by the side of the Rhine, and another while following the circuitous course of the Lahn; sometimes stalking along high in the air, under the bold precipices of a towering rock, at other times gliding in the shadow of cool, refreshing, overhanging woods; one while inciting us to wish for our fishing-rod, another while to wish for our—I was going to say gun, but am suddenly reminded of a peculiarity of Nassau, namely, that there is not a bird on the Taunus; and the want of our little warbling companions of the air is really a grave one; their absence gives an unwelcome silence to the scene, that ravines, and rocks, and dashing rivulets do not sufficiently compensate. I was at first at a loss to account for this absence of the feathered songsters of the air; I began to think that they had all flown away when their haunts were invaded by the Romans, those awful Romans, for whom the Balneologists contend so vehemently, and had never come back again; or perhaps they preferred a more quiet and genial tippie than that afforded by fizzing springs; and not having the “pip,” they were in no need of the flavour of rusty nails, which most of these waters have picked up somewhere; or a bad cold, and therefore had no relish for beef-tea without the beef; and then I began to think that, with more circumspection than human birds, they sniffed the smell of Lucifer below the crust, and had no

intention of being some day let in as the victims of a holocaust, or of a pigeon or a sparrow pie; then, after turning the ornithological fact in every direction, I was fain to come to the vulgar conclusion that the birds preferred the smiling vineyards and cornfields of the Rheingau, the paradise of Germany, to the bleak air and cold forests of the Taunus, deficient of every vestige of food for little birds, except fir-cones, beech-nuts, and bitter acorns.

Ems forms a little crescent on the right bank of the Lahn, at a spot where there is just space enough for some buildings on the brink of the river, of which the Curhaus and Assembly-rooms are one; a narrow promenade, the public road, and a row of houses, built back against the almost perpendicular rock, indeed perched up upon the foot of the rock, in some parts nearly a hundred feet above the road, and approached only by flights of steps. The houses are large and white, chiefly hotels and lodging-houses, and contain an abundance of rooms; their aspect is towards the south, hence they are hot in the summer; the heat being increased by the closeness of the valley; but there are some few other houses, reached by a bridge, on the other side of the Lahn, which are cool and shaded in the extreme heats of the summer, but too much shaded and gloomy at other seasons. Dr. D'Ibell, the bath physician of Ems, speaks of the place as resembling a funnel; the broad mouth of which

is towards the sky, while its sides are wooded hills, by which the valley is surrounded in every direction.

Like other watering places of a similar kind, it has its pleasant walks and rides, its gardens and its groves, and its agreeable excursions to the pretty views on the surrounding hills and to the neighbourhood; even to the castled heights of Lahneck, which frowns superciliously, and, at the same time benignly, on the scene below. Its climate is mild, with an early and long spring, and equally long autumn; an intensely hot, breathless summer; hot days, and cold mornings and evenings; but little wind. Like wooded hills in general, its topmost walls attract mists from the passing clouds; and its autumnal mornings are dense with the fogs which rise from the Lahn. On the whole, however, Dr. D'Ibell speaks favourably of the climate, even in the winter-season; and thinks it not unsuited, from its protected position, for the residence of pulmonary patients, as its waters are adapted to their medical treatment. In the winter, he thinks the halls of the Curhaus, warmed by the steam of the water, sufficiently comfortable to induce invalids to make Ems a winter residence.

The springs of Ems are twenty-one in number; they take their rise in a Grauwacke rock, situated behind the Curhaus; and although they most probably all originate in the same source, they choose to issue from different fissures of the rock, and therefore present cer-

tain differences of temperature, and of proportion in their chemical constituents. Their difference of temperature amounts to as much as 38 degrees of Fahrenheit, the coolest being 90°, and the hottest 128°; the difference in amount of carbonic acid gas is shown in the proportion of sixteen and twenty cubic inches, the extremes of their contents in the pint; the larger quantity being found in the cooler water, the smaller in the hot; and the difference of their dose of bicarbonate of soda is eighteen and twenty-one grains to the pint. The appearance of the water is clear and transparent; but its taste differs in correspondence with the differences of strength of the elementary constituents already noted. The hotter waters are saltish and alkaline, and communicate a flavour of weak beef-tea; while the cooler waters are less saline and alkaline to the taste, and more brisk and piquante, from containing a larger quantity of carbonic acid gas. Dr. D'Ibell also notes another peculiarity, which admits of a ready explanation, but which to the unlearned approaches the marvellous; it is that these waters are cooler to the mouth and palate than plain water of the same heat; a fact that every one may put to the test who will sip, alternately, soup and plain hot water of an exactly similar temperature.

The drinking springs of Ems are three in number; namely, the *Kesselbrunnen*, literally the kettle-spring, which gives issue to four thousand cubic feet of water

daily, of a temperature of 115 degrees of Fahrenheit; the *Fürstenbrunnen*, or Prince's spring, whose water has a temperature of 96°; and the *Krænchen*, or source of the tap, so named because it issues from a silver tap in a niche of the drinking-hall of the Curhaus, its temperature is 84°. The Kesselbrunnen rises in a marble reservoir in the Curhaus; and the Fürstenbrunnen issues into a basin at the distance of a few feet from the Krænchen. Besides these, a new spring has been recently discovered opposite the garden of the Curhaus, which is both hotter and more abundant in its supply than those before named, having a temperature of 117 degrees of Fahrenheit, and pouring forth every minute something like one hundred and seventy-five gallons. This latter source has been the means of affording an exhaustless supply of water to the baths. The temperature of the water for drinking ranges between 99° and 77° of Fahrenheit.

The water for the baths is collected into eleven great reservoirs, for the purpose of cooling; no plain water is mingled with it; and from the reservoirs it is distributed by means of pipes to the bathing cabinets, of which there are upwards of a hundred. In the bathing establishment is a vapour bath, a strong douche, and milder douches, applicable to several of the baths. And there is a natural ascending douche, of the proper temperature of the water, 88° of Fahrenheit, which is

called, *par excellence*, the Bubenquelle, literally the Baby spring, which is oftentimes as mischievous from mismanagement as beneficial when judiciously employed; and which Dr. D'Ibell very properly suggests should never be used without the special prescription of the medical man. The Bubenquelle fountain is half an inch in diameter, and rises from the bottom of a basin, on turning a stop-cock, to the height of between two and three feet.

As to their uses, or curative results, the waters of Ems are celebrated for their beneficial effects in all cases in which there is a prevalence of acidity in the system; in thickening of the juices of the body, as, for example, of the bile; in thickenings of the solids, arising from morbid function or chronic inflammation; in gall-stones, calculous disorders of the kidneys, gouty deposits, and rheumatic enlargements, and in chronic expectoration, depending on old bronchitis or catarrh. In cases of the latter kind, the relief to the mucous membrane is said to be immediate, and the sensation is spoken of as "balsamic." The Hygeia of Ems also holds out her hand to those of her own sex who need her assistance; she removes obstructions; softens and brings away tumours; and she invites them, under the guidance of her man of business, the Doctor, to venture a trial of the Bubenquelle, when the possession of a doll to dress and undress is the first object of her mind and wishes.

FACHINGEN is situated higher up the valley of the Lahn, following its windings, about twenty miles above Ems, and on its left bank. Its waters are only employed internally, and not drunk at the spring, but exported for use at the other spas, or in distant countries. They are *carbonated alkaline chalybeate waters*, containing thirty-three cubic inches of carbonic acid, twenty-eight grains of bicarbonate of soda, four grains and a half of muriate of soda, and one-tenth of a grain of carbonate of the protoxide of iron, to the pint. Hence the Fachingen water comes under the double category of alkaline and chalybeate, and is calculated to be very useful when judiciously used. To the eye, the water of Fachingen is clear and sparkling; and to the taste, cool, acidulous and piquante. It is antacid, tonic, and mildly alterative, and is of service in indigestion, accompanied with acidity and debility; in debility of the kidneys, attended with acid secretion; in chronic bronchitis, irregular gout, and gouty affections of the skin; also in general anæmia, and debility; and in the glandular enlargements of children.

SELTERS, or NIEDER SELTERS, is situated on the Emsbach, the latter opening into the Lahn some miles above Fachingen. Its waters, like those of the latter place, are only used for exportation; but their celebrity is so great, and so deserved, that they find their way into every corner of the habitable earth. In Germany itself, they form one of its greatest luxuries; being used either

with wine, with sugar, or alone, as a common drink. The water is clear, transparent, sparkling, and piquante, and leaves behind on the palate a slightly saline flavour. Its chemical composition is, thirty cubic inches of carbonic acid gas to the pint, with nine grains and three-quarters of bicarbonate of soda, seventeen grains of muriate of soda, and one tenth of a grain of carbonate of iron. Thus, it must be regarded as a *muriated saline water*, and not a carbonated alkaline water like that of Ems.

As a medicine, the water of Selters is useful in all cases of illness where a mildly alterative antacid, and at the same time solvent, remedy is required; as in dyspepsia, gout, rheumatism, acid secretions from the kidneys, and also in scrofulous and glandular affections. It has, besides, acquired esteem in chronic catarrh and bronchitis, and even in that stage of organic change in the lungs known as consumption. In the latter case, it is convenient and proper to dilute the seltzer-water with warm milk, or with asses' milk.

GEILNAU is a pretty spa, situated immediately above Fachingen, on the opposite bank of the Lahn; its waters very nearly resemble those of Fachingen and Selters, and are very agreeable to the taste. They contain twelve grains of bicarbonate of soda, two grains of carbonate of magnesia, and one tenth of a grain of carbonate of iron and manganese to the pint, with nearly twenty-four cubic inches of carbonic acid.

CHAPTER VIII.

LANGEN SCHWALBACH.

LANGEN SCHWALBACH is a long straggling little town, consisting of barely more than one street, and having a population of 2,200 souls. It lies in one of the little deep valleys of the plateau of the Taunus, running parallel with the ridge of the Taunus chain, that is, from south-west to north-east, and opens into the valley of the Aar. Its elevation above the level of the sea is 900 feet, and 670 above that of the Rhine; it is sheltered from high winds by the mountains on every side; but, from its elevation, is cool in the summer season, and cold in the winter. During four summers, 1846 to 1849, the highest temperature ranged between 69° and $71\frac{1}{2}^{\circ}$; and it is apt in the early mornings of autumn to be choked with a dense fog, as I have already witnessed. Of the mountain wall which surrounds it, the northern point alone is bare and rocky at the summit, the rest is either in cultivation or covered with beech forest, which everywhere takes possession of these mountain hills. The little town is

situated on the line of road from Ems to Schlangenbad and Wiesbaden, being about twenty-six miles from the former, and ten miles from Wiesbaden. Like the rest of its sister watering places, it has its donkeys, arrayed in the latest fashion of scarlet petticoat, not the brisk little Ardennois of Spa, and its excursions to give business to the scene ; its pic-nics and pilgrimages to Adolphseck ; the ruins of Hohenstein ; the chateau of Hohlenfels ; Schlangenbad ; Nieder Selters ; the Hohe Wurzel, one of the mountain tops of Mid Taunus ; and La Platte, the hunting rendezvous of the Duke of Nassau.

After trailing its lengthened way for some distance up the valley from the north-east, the little town, leaving its church and tall steeple behind it, suddenly expands, like the top of the stick with which I have seen boys and girls play at cup and ball, into a crescent of some magnitude. This is the broadest part of the valley, and it is here that the largest and best lodging-houses and hotels are placed, while here, also, the high road from Ems to Wiesbaden takes the opportunity of crossing the vale with a gentle curve. The horns of the crescent correspond with the precipitous roads which ascend the sides of the valley to escape at the summit of the ridge ; that on the right to Ems, that on the left to Schlangenbad and Wiesbaden ; while two other horns—for like Burns's moon, the crescent of Schwalbach has four horns—run forward at a lower level, curving gracefully outwards in

their way, and represent two smaller valleys which are respectively named Rödelbachthal and Menzenbachthal. These two little valleys are separated by a low spur ; while one (Das Menzenbaehthal) is the plaisaunee of Schwalbach, and contains the celebrated Weinbrunnen, the Paulinenbrunnen, and the Rosenbrunnen, and the other the equally famous Stahlbrunnen.

The right-hand valley opens from the high road by a small grove of trees planted in avenues, so as to give the drinkers an opportunity of exercise ; beyond the grove, and on its skirt, is a music temple, whence the sweet tones of German and Italian operas fall pleasantly on the ear ; and beyond this temple of Apollo is the circular rail that eneloses the far-famed Stahlbrunnen. Beyond the hallowed circle of the Stahlbrunnen, the grove becomes thicker, and following an outlet by its side, we find ourselves in a path that leads away to the mountains, for a while forming a terrae to the little valley, and then dashing into the shaded walks of the low beech tree forest. I was strongly reminded by all this of those sacred groves of ancient Greece and Rome where Religion and Medicine sat on the same throne, and were worshipped at the same altar, and where Apollo and the Muses were fain to pay respectful homage. Ah ! Medicine, how hast thou grown to stalwart womanhood since those dark days ! but how hast thou sunk in man's devotion ! except when he has a stomach-ache.

Blocking the mouth of the left-hand valley, is the Gashof Zum Allee Saal, in other words, the Hotel of the Promenade; and, on either side of this enormous hotel, an entrance to the valley itself; to the right, over the point of the spur which divides the two valleys, along a terrace planted with an avenue of trees, the Allee Saal, and skirted by a lower terrace, descending directly to the gardens; on the left, by a broader entrance, flanked by an ornamental garden shrubbery. Here, to one side of the little valley, and running parallel with it, is the bath establishment, with an open colonnade and series of bazaar-like stalls for the sale of souvenirs of Schwalbach; pretty trifles in Bohemian glass; carvings in horn, wood, and ivory; jewellery; prints and books; and children's bravery. After skimming over the pretty things with all the zest which the old as well as the young feel in looking in at shop-windows, we approach the altar of Hygeia, placed on a little elevation of the ground, and encircled by a light fence of iron and red sandstone; this is the famous spring of the water-wine of the Romans, the WEINBRUNNEN, whose grateful acidity and sparkling briskness remind us of Champagne; Champagne with a smack of the toasting-fork.

The water is received into two oval-shaped basins of red sandstone, about two feet in depth; and these basins are lodged in a shallow pit, paved and lined by red sandstone, and reached by a flight of steps at each side. The

bottom of the basin is perforated with holes, one with several, the other, the chief drinking basin, with one only. The carbonic acid gas rises up through these holes in little coveys of bubbles, and breaks upon the surface with a crackling noise. The one opening of the drinking basin is intended to concentrate the carbonic acid gas, which then boils up in large bubbles, and is further accumulated by a bright metal funnel, sunk below the level of the water, and into which the whole of the gas rushes, sometimes lifting up the surface water as though it were in strong ebullition. A good-looking girl performs the part of barmaid of the spring, handing to the visitors, as they approach the outer rail, a glass cup of her generous liquor, for which she dips into the pewter funnel. After quaffing his cup, the drinker places it on a small shelf inside the top of the rail, and then hastens away for his walk, returning for another glass when the first is well shaken down, or, in the language of these free-drinkers, digested. "This is the sixth cup (half-pints) I have swallowed this morning," said a phrenzied-looking Englishman to his friend, while I was gently sipping the inspiring but somewhat cold beverage at his elbow; "this is my sixth cup, and I think by the time I have walked over that hill and get back again I can drink a seventh." I thought so too, from his appearance, for he didn't seem to me to have room for a stomach under his waistband; and I came to the

conclusion that the water must have slipped down some side alley, and gone clear of his stomach altogether; or else that he was an editor of a London daily paper, and lived upon ink. Nearly four grains of cold iron, to wash out his stomach before breakfast; enough to give it the iron-mould, or turn the poor thing into corrugated leather.

Satisfying myself with a mouthful of the water-wine, which reminded me of its whereabouts for an hour or two afterwards, and nodding a farewell to the pretty barmaid, I strode away up the valley. First, I came to a small patch of ornamental garden, with seats pleasantly placed under the trees, and tables to rest their glass, for those who take time to finish it; then came a music-temple, with an excellent band to give time to the promenaders. I didn't understand the airs, but I have no doubt they were very encouraging to those who did; that there was "Another glass before we part, boys;" "Fill your bumpers," and such like joyous inducements to perpetuate the iron age; then came a lake, as big as a good-sized pocket-handkerchief, with ducks, and swans, and a boat upon it, and seats in the little shrubbery around it, where sentiment and crochct were gaily blended together, with here and there a stray volume of Paul de Coq, or Eugenc Sue; then followed a meadow, with a rivulet running through its middle; and beyond that, another meadow, both rich in the purple cups of the

autumnal crocus ; and then my pathway bent aside, and followed the little mountain stream up to its cradle, among the sheltering hills. But in one corner, in a secluded nook between the two meadows, I found a pair of dames I was more intent on making acquaintance with than with the pretty mountain streamlet ; no less personages, in fact, than the PAULINENBRUNNEN and ROSENBRUNNEN, both confined in the same pit, like two beneficent tigresses. Their pit was larger than that of their more courted brother, the Weinbrunnen ; it was also deeper, entered by a double flight of steps, but apparently deserted. There was an air of melancholy about them ; the big dry leaves of the plane-tree played at leap-frog and hockey on their red pavement, grass was growing between its cracks, and the ladies' maid, further sign of desolation, sat like "patience on a monument," knitting a new foot into an old stocking. I asked for a cup, and was handed *the* cup, the ladies had only one cup left between them, and I drank with them both ; but it was a sorrowing cup at seeing them so deserted. Well, it was the seventh of September ; rather late in the season ; perhaps that might account for it. There was a thick deposit of a red ochreous sediment around the basins ; and one of the two ladies had the bottom of her basin broken, which enabled me to see the bed of sandstone rock, consisting, apparently, of a stratum of fragments, from between which the bubbles of carbonic acid gas,

the only cheerful bit of life in the whole picture, stream up to the surface with a lively cluck, cluck.

Having followed the little stream for a short distance further, I returned by a pretty terraced pathway on the other side of the valley; passed in my way the pale cheeks and paler lips and eyes of those who sought and needed the iron-springs; and then made a pilgrimage across the spur between the valleys to the Stahlbrunnen. I have not yet read the "Bubbles of the Brunnens;" it is a pleasure in reserve for the winter evenings, and one I shall now more fully enjoy; but I was reminded in my walk of a passage I had heard attributed to the "old man," in which he meets the bottle at every stage of life, from the tottering infant to the equally tottering grey-beard. It was not the little chubby fellow who was toiling up the hill with a large earthen bottle in his embrace that called this passage to my mind, but the borders of a garden formed of these earthen bottles, sunk mouth downwards in the ground. The ornament had so odd an effect, and reminded me so vividly of panbottleism, that I could not help stopping to smile my admiration of it. A few steps further, I came upon the road that runs along the crest of the spur, between the two valleys; and in its deep water-washed gutters I obtained some specimens of a peculiar argillaceous shale, which forms the basement of the shallow layer of productive soil of this neighbourhood. It was smooth to

the touch, greyish and somewhat yellowish in colour, brittle, and laminated, the laminæ being upright and nearly vertical. It is to this substratum of argillaceous shale in vertical plates that is said to be due the dryness of the soil, and the rapid disappearance of moisture after a shower of rain. Storms are rare in this region; but I was there during a violent thunderstorm, accompanied with a prodigious flood of rain, which occurred in the evening. Next morning early, when I sallied out for my morning walk, there was scarcely a trace of the storm visible, except at the springs. There the level of the waters was somewhat raised, and filling the spaces between the paving-stones, I was made aware of the abundance of carbonic acid gas generated in the earth, by seeing it issue in a succession of bubbles from all the divisions of the pavement.

Relating my experiences of the morning to the guests at the dinner-table, I was informed that the season had been unusually dry, and that during the summer there had been some alarm of a deficiency of water, and for a few days the bathers were put on half allowance in their baths. This, however, was soon corrected, not by rain, but by the reduction of the number of bathers, as the close of the season was approaching. Crossing the spur, I descended by the side of an orchard, and was soon in the grove, and in presence of the STAHLBRUNNEN. An infant in arms was drinking the water apparently

with pleasure ; and Dr. Genth, the physician of the Spa, reminded me that at one time the Weinbrunnen was commonly drunk with wine and sugar, in the same way that the waters of Selters are now. It occurred to me that a dash of real wine in the Weinbrunnen would not be an unpleasant addition. From the Stahlbrunnen, I strayed down the town to one of the early springs of the place, the Brodelbrunnen, or whirlpool ; and then wandered along to the bottom of the valley, where town life rose in contrast with the *dolce far niente* and scrambling but more elegant life of the wells.

The country around Langen Schwalbach abounds in chalybeate springs, which are met with in all the neighbouring villages ; but are weaker in iron than those of Schwalbach. In Schwalbach itself there are no less than ten sources ; namely, the Weinbrunnen, or Wine-pool ; the Paulinenbrunnen and Rosenbrunnen, the Pauline and Rose pools ; two sources which go by the name of Ehebrunnen or Husband's pools ; the Stahlbrunnen, or Iron-pool ; two Neubrunnen, or New pools ; the Lindenbrunnen, or Limetree-pool ; and the Brodelbrunnen, or Whirlpool. One would have liked to see the old Romans tipping away at the Weinbrunnen, and coming upon it for the first time. I once recollect to have seen the effect of the lees of wine upon a family of pigs ; first, there was the grunt of discovery ; secondly, the "not so bad neither, old fellow," aside to his companions ; then

there was the "by Jupiter, this is the right stuff, eh?" and then came the after-consequenees; but them I need not stop to record. But I can fancy the ancient Romans first wiping one eye and then the other, and then the snort of satisfaction when they first stumbled upon what they chose to designate as *aqua vinaria*.

The Ehebrunnen, or Husband's Pools, are situated about two hundred paces higher up the valley than the Pauline and Rose springs; while the Lindenbrunnen and Brodelbrunnen are met with in the town. The temperature of the water varies between forty-five and fifty degrees of Fahrenheit; it is limpid as crystal, and crackles with its abundance of carbonic acid gas. The Weinbrunnen, the Paulinenbrunnen, and the Stahlbrunnen are those which are chiefly used for drinking; they contain respectively somewhat less than twenty-one cubic inches of carbonic acid gas; somewhat less than twenty-three, and eighteen cubic inches, the charge of the Pauline. The quantity of iron in the form of bicarbonate of the protoxide, the best possible form for medical purposes, is somewhat less than half a grain in the Weinbrunnen, half a grain in the Paulinenbrunnen, and nearly seven-tenths of a grain in the Stahlbrunnen. There is no iron whatever in the old Brodelbrunnen, which is now deserted. The other principal constituents of the three chief drinking waters are bicarbonate of magnesia, of which there are from one

and a quarter to nearly five grains ; bicarbonate of lime, one grain and a half to four and a quarter ; and muriate of soda and sulphate of soda, from four to six-hundredths of a grain. The Ehebrunnen are weaker than the three preceding, and are not at present employed.

The baths are a small establishment in comparison with Ems ; there are forty-seven cabinets supplied from the four drinking sources above named ; the water is received into four reservoirs, with every precaution for preventing the escape of the carbonic acid gas, and is heated in the baths by means of steam admitted beneath them. The quantity of water in each bath is fourteen cubic feet ; and this quantity may be raised to a temperature of 90° to 95° of Fahrenheit in from six to ten minutes. The detention or fixity of the gas by the water is one of the most curious of the peculiarities of these highly carbonated waters ; thus, taking the quantity of carbonic acid gas contained in the waters at their source at one hundred, that quantity after a night's rest in the reservoir is only reduced to ninety-two ; after exposure to the air for four hours, to eighty-two ; and after being heated and used as a bath for half an hour, to sixty-one.

There are few things on the earth more enjoyable than a residence under water in one of these baths for half an hour. I speak from experience of this delight, having philosophised tranquilly on the matter for that

term of life one morning shortly before dinner. The temperature, as prescribed me by the bath-woman, was 86° of Fahrenheit ; and I had no reason to differ from her in opinion as to the result. The bath just holds sufficient water to cover you completely ; lying at full length, with the back of your head resting on the edge, you fold your arms and compose yourself to peace. The position of your head gives you a view of yourself through the green-looking transparent water ; and your first observation is one of admiration of the extreme whiteness and fairness of your skin, and you are reminded of the naive expression of admiration of the Frenchman, who said, with regard to a neighbouring bath, that “on devient amoureux de soi-même.” Next you are struck by the appearance of what seems to be a copious eruption breaking out over the whole skin ; but an eruption of an unusual kind, an eruption, in fact, of glittering pearls ; and then the adhesiveness of the pearls is remarkable, you cannot shake them off, but you must wipe them off with a sweep, in order to come to your white skin once again, and then they collect as fast as ever. But, as you are prohibited from moving while in the bath, and as your own sensations soon tell you that you are chilled by motion, but feel warm and comfortable under this novel costume of pearls, you are fain to leave them alone. But this is not all ; your bath is not like other baths, a silent bath ; it is a musical bath ; and

while you are thus amusing your eye, firstly, with the charms of your own skin, and then with the sparkling vest of pearls that quickly clothe it, your ear is gratified by a little talkative, wick, wick ! wick, wick, wick ! wick, wick, wick, wick ! and when you turn to look after the little fellows that are treating you to a pigmy concert on the surface of the water, and begin to fancy yourself a Gulliver in one of the seas of the Lilliputians, there is a round-mouthed chuckle close to your ear, which makes you afraid that the Lilliputians have, since settling accounts with Gulliver, hired an army of stronger fellows to fight their battles in case of need ; and then, dear me ! your mind is relieved from anxiety by finding that the wick wicks are only little playful gas-bubbles that are cracking their jokes, and their sides also, on the surface of the bath, and that the more noisy, laughing fellows are only bubbles of a larger growth, that slip out from under your back or from the hollow of your arm-pits. My half hour soon slipped away ; and if his Royal Highness of Clarence took pleasure in his bath of Malmsey, I also enjoyed my bath of the water-wine of Schwalbach. It is here that the old grow young, and the weak, strong ; while calm, tranquillity, and ease, envelop, as in a mantle, the charmed and soothed senses.

As there is an end to all things, so an end came at last to my pleasant bath. I found contrivances of various

kinds for the exhibition of the douche ; and I ascertained that baths are to be had in several of the hotels, as the Cour de Russie, Ville de Mayence, and Ville de Coblenz ; but I also found that the water for these baths was conveyed to the hotels by means of casks, a process that must necessarily tend to dislodge and disperse the carbonic acid gas, and therefore render them less useful. Making a profound bow to the Dame des Bains, I turned into the garden for a stroll, and there came unexpectedly upon an operation, the observation of which gave me much pleasure.

I have already glanced at the perfect integrity which pervades the baths of Germany, an integrity which is vouched for by the high character and learning of the physicians appointed by Government to the baths. The source of Aix-la-Chapelle is watched with the most jealous care, lest it should be tampered with. Dr. D'Ibelle appeals to the unmixed purity of the waters employed for the baths at Ems ; and Dr. Genth called our attention to the care with which the reservoirs for containing the waters are cemented, how they are placed underground to be kept cool, and how their distributing pipes are always full, in order to prevent the escape of the carbonic acid gas, and the admission of atmospheric air. I had another and unlooked-for illustration of the remarkable care which is taken to secure the water in its most perfect state, in bottles, for trans-

mission to different parts of the country and to distant lands.

The exportation of the Schwalbach waters is no longer what it was when the water was used in the same manner that the Selters water is now; when, in the summer months, from eight to ten thousand bottles were filled and carried away daily, affording occupation to several hundred carriers. The process of bottling, such as it was performed under my own eyes, I will now describe: Each earthen bottle was carefully rinsed out, in the water of the spare basin of the Weinbrunnen source; it was then, the metal funnel having been removed and a conical pipe screwed into its place, held over this pipe until it became filled with carbonic acid gas; next, the aperture of the pipe being a few inches below the level of the water, it was turned over and placed on a ledge inside the basin; here it filled itself, displacing, as it did so, the carbonic acid gas from within. The next part of the process is to transfer the bottle, full to the brim, to a table, and insert into its mouth a small plug capable of displacing as much of the water as may be necessary to receive the cork and ensure the safety of the bottle and its contents. Immediately the plug is withdrawn, a small India-rubber tube, leading from a carbonic acid gas machine, is inserted into the mouth of the bottle, so as to supply the place of the water dislodged by the plug by means of this gas; then

the cork is quickly inserted and driven home, and the bottles are carried away to a store to be sealed down. I must confess that the excellence of the German waters in England has always been a matter of surprise to me ; that surprise has ceased, now that I have seen the care and method practised in the bottling.

CHAPTER IX.

SCHLANGENBAD.

A VISIT to Schlangenbad, the Bath of Serpents, from Schwalbach, the Brook of Swallows, presents itself before us in several points of view ; *firstly*, it is one of the excursions from Schwalbach, at a distance of from three to four miles, and can be accomplished either on foot, on a donkey, or in a carriage ; *secondly*, it is a pleasant ride up one hill, along an undulating road, down another, and then a gentle rise through a pretty valley, and we are at Schlangenbad ; *thirdly*, its position is peculiar and interesting, the delta of a little valley, the Warnebach, which runs parallel with the crest of the Taunus, and opens upon another valley, the Waldbach, by which we reach it from Schwalbach, and which makes its way down to the Maine at Lower Walluf ; *fourthly*, it commands our respect from occupying the highest and at the same time the deepest of the rocks of the Taunus range, the Quartzite ; so that our little trip

from Schwalbaeh to Schlangenbad is in reality a crossing of the frontier, from the Grauwacke or Sandstone of the north-western face, the plateau of the Taunus, to the older transition rock which forms its crest; *fifthly*, the road which leads us from the little town on one side to the village on the other, is one of the passes of the Taunus, and the line of separation between the middle Taunus and the Rheingau mountains; for it is not far from hence that once stood the portal of the Rheingau, a construction of natural rock and masonry, with an arched entrance, that served to defend the vineyards of the Rheingau from the invasion of enemies; and *sixthly* and lastly, Schlangenbad resembles those good-natured persons in society of whom we all know some, and could put our finger on two or three at any moment of our lives, that possess a reputation founded upon negative virtues, who are neither bad nor good; useful or useless, dull or lively, stupid or clever; but, nevertheless, they are such as we could not do without; their loss would leave a gap in society.

I believe the term Schwalbach, or Brook of Swallows, to be founded on a myth. The only bird I ever succeeded in discovering at Schwalbach, after a careful search, excepting always the pair of swans, and the half-dozen ducks on the lago minore, was a kind of water-wagtail that hopped from stone to stone along the rivulet, and I thought myself justified in arriving at the inference

that as I had seen one bird, there might possibly be another somewhere ; and it occurred to me also, as being just probable, that as the inhabitants of the Taunus were not visited by birds, they could hardly know the difference between them ; and that those ancient people who first gave a name to Schwalbach may have mistaken the ancestors of this water-wagtail for swallows. I was endeavouring to come to a similar conclusion with regard to the title of the Schlangenbad ; but all preceding historians appear to be unanimous on the point that the serpents are no myth, but that they have a real existence ; discovering, among the fragments of the rocks, and in the crevices of the ancient walls, as well as in the warmth of the soil, a habitation agreeable to their instincts. I am happy, however, to be able to add, on the authority of Dr. Bertrand, the physician of the baths, that the serpents are perfectly innocent, belonging, as he observes, to the species *Coluber flavescens*, seu *Scopolii*.

Schlangenbad bursts upon you suddenly, and is always a little surprise, even when you become familiar with the place ; and whether you ascend towards it from the direction of Schwalbach or the Rheingau, on the one side you come first on the wall of the grounds, then on a little grove with some seats, then, sweeping to the right, you find yourself in face of the Curhaus, with its little triangular garden and tall fountain in front ; or coming up the valley from the direction of the Rheingau, you

find yourself in the street of Sehlangenbad, if street can be called houses built up close to the foot of the rock on one side, and a grassy declivity, ornamented with shrubberies and gay summer-looking residences, on the other, scattered like villas over the side of the hill, and descending even to the bottom of the valley, where the Waldbach dances along in its rocky bed, and, further down, is made to get its living by turning the wheels of several mills.

Sehlangenbad, small and insignificant as it appears, has seen many changes of fortune, has managed to struggle through many reverses, and may serve to point a moral, by showing what industry and perseverance can eventually accomplish. Any one seeing it now, with its pretty detached villas, its tall white houses, its Curhaus, its hotels, its bathing establishments, mustering a little army of two hundred houses, or thereabouts, will hardly believe that once upon a time no habitation, no dwelling existed in the place, but three solitary mills, called the hot mills, from the warmth of the water; then a horse or a cow discovered the medical virtues of the springs; next a doctor from Worms sniffed their health-giving properties, and bartered a couple of butts of good wine of Worms for the exclusive right and privilege of fanning the waters; but whether or not he was unable to induce his patients to come to the top of this mountain for a cure, or whether they were afraid of the Æsculapian ser-

pents that held possession of the spot, does not clearly appear; but Dr. Gloxin has left no mark behind him but the recollection of his bad bargain, and it was not until forty years later, namely, in 1694, that the first bath establishment was built by the Landgrave of Hesse. At this time the little stream poured out by the warm springs, the Warmebach, enjoyed the high privilege of dividing the territory of Hesse from that of Mayence; and it was not until long after, till quite recently in fact, namely, at the treaty of Vienna in 1816, that Schlangenbad was yielded by the House of Hesse and came into possession of the Duke of Nassau.

In the front of the Curhaus is a covered terrace, whence we look out upon the little delta of ornamental garden ground, with its fountain, and where we sip our coffee to some delicious airs played by a band in a little pavilion on one of the terraces to our left; on either side are the bath hotels, and on our left is the drinking fountain, issuing from the wall by a pipe which conducts it to a basin below. Behind the Curhaus and the bath-houses are ornamental grounds, sometimes rising in terraces, sometimes following the windings of the little Warmebach; here laid out in groves and there in orchards; and higher still, we mount the side of the mountain, under the shade of the beech forest, to its summit, whence we look out upon a magnificent scene, comprising the country of the Rhine, the Maine, and the beautiful vista of the

Taunus. Schlangenbad is situated at an elevation of nine hundred feet above the level of the sea, and consequently enjoys those advantages of climate which belong to a mountainous region, and is immediately surrounded on all sides, excepting that of the valley of the Waldbach, by a wall of hills which tower above it to a height of six and seven hundred feet.

These conditions of geographical position, and the warmth of the springs which flow into its valley, bestow on Schlangenbad a remarkable uniformity of temperature; cool summers, early springs, and mild winters; possessing a fresh mountain air, protected by its hills from high winds; and neither too dry nor too moist; and these qualities have gained for it some reputation as an abode for invalids suffering under diseases of the air tubes and lungs. On the other hand, it must be admitted that its early mornings are misty, and evenings cool, and it is subject to frequent showers, the moisture from which the declivity of its position and gravelly soil speedily carry away. It is somewhat warmer than Schwalbach, and cooler but more healthy than the adjacent plain of the Rhine; but, with such an abundance of trees, I should dread the fall of the leaf in the autumn season.

The waters of Schlangenbad issue from the base of a rock called the Barstadter Kopf, on its southern aspect; and it possesses nine springs, namely, three which arise behind the upper or old bath-house; three which supply the

lower or new bath-house; the RÖHRENBRUNNENQUELLE, or Fountain spring, which is chiefly used for drinking; the Schaehtbrunnenquelle, which contains the greatest abundance of solid contents; and a spring behind the Pferdabad, or Horse bath; and to these may be added an acidulous alkaline water, which rises near a mill in the Badwiese, or Bath-meadow, and which has been ascertained to contain upwards of eleven cubic inches of carbonic acid gas to the pint. The quantity of water proceeding from these sources is very considerable, amounting, for the first seven, to nearly five hundred cubic feet in the course of an hour.

To my taste, the water was altogether deficient in flavour, and vapid; but those who are anxious to discover in it some indications of its chemical constituents, find it weakly saltish and alkaline. It is free from all odour and gaseous contents, and is clear, transparent, and bluish in tint of colour. Its origin from the insoluble quartzite rock, and the absence of carbonic acid gas to operate as a solvent of the rock, explain its want of taste, while they equally explain its clearness, its transparency, and its purity. The largest amount of soluble contents found in a pint of the water is six grains and a quarter; three grains and a quarter of this quantity being carbonate of soda, and the rest carbonates of lime and magnesia, with a little more than a grain of muriates of soda, lime, and magnesia. The quantity of carbonic

acid gas is less than one cubic inch to the pint, and its specific gravity scarcely greater than distilled water. A purer water hardly exists in nature, except, perhaps, in the waters of Wildbad, with which, as with the waters of Liebenzell and Pfeffers, Schlangenbad admits of being associated.

But, with a body of constituents so feeble, we cannot admit the waters of Schlangenbad into the same group with the carbonated sodaie or alkaline waters of the north-western Taunus; as, for example, of Ems, which, itself a mild water, contains, instead of three, from eighteen to twenty-one grains of bicarbonate of soda to the pint. The waters of Schlangenbad are therefore, in a medicinal point of view, simply diluent; but probably, from the absence of saline and earthy ingredients, and from their extreme purity, they may be more solvent in their action, in feeble constitutions, than other waters more highly charged with saline matters. Dr. Bertrand claims for them the property of making excellent tea, and reminds us of the researches of Pleisehl into the chemical and dietetic qualities of the Chinese leaf; and his conclusion, that the addition of bicarbonate of soda to the infusion, in the proportion of two grains to thirty grains of the dry leaves, renders the tea stronger, more agreeable to the taste, and more easy of digestion. The use of bicarbonate of soda in the making of tea is common in England; but quantity is usually disregarded, and it

might be worth the attention of some of our clever housewives to be more exact in the proportion which they employ. We must take Dr. Bertrand's fact with regard to the making of tea with the Schlangenbad water as it comes to us, and without question ; as, in addition to the small quantity of soda which the water contains, the water is otherwise in a high state of purity, and very different from the water supplied by the London water-works, or even raised from our own wells.

The medical virtues of the Schlangenbad waters must therefore be set down as very trifling ; but still such as are not to be wholly disregarded, although their chief claim to medical powers rests on their use as baths. Their temperature varies from 81° to 87° or 90° of Fahrenheit, a temperature insufficient for warm baths, without the aid of artificial heat, to correct the cooling of the water by exposure. They are soft and unctuous to the sense of touch, and their bluish hue, like that of the sea, neutralises the yellow tint of the skin ; and, like the blue-bag of the laundress, gives a remarkable appearance of whiteness to its surface ; just as a pair of blue spectacles throw a bloom of paleness over the complexion of one's friends. Whether those who witness their exceeding whiteness in the crystal water expect it to continue or not when they leave the bath, I am unprepared to say ; but the baths of Schlangenbad have the credit of bestowing great beauty and softness on the skin, and

have gained, on that account, the name of the Bains aux Dames. Dr. Bertrand is willing to give another reason for the latter appellation, in connexion with the Schlangenbad waters; but I still prefer the present reading. The softness of the waters to the sensations of the skin is due to the carbonate of soda; of which, from three to four ounces may be supposed to be contained in each bath.

Dr. Bertrand remarks, that in the vaults of the reservoirs of the springs are occasionally found laminated stalactites one or two inches in length, and beautifully white, being composed of carbonate of lime; with the small quantity of lime possessed by the waters, these stalactites must be very long in course of formation. The baths are roomy and commodious, and twenty-five in number, exclusive of nine of the old Roman baths, which are large enough for a swim; then there is one called the marble bath, or elector's bath, which opens out of an elegant dressing-room. In the old bath establishment, the water is still heated by boiling, while, in the new establishment, the improved plan is adopted of heating it by steam. Besides the ordinary baths, there are douches both portable and fixed, and one percussion douche.

Like other bathing establishments, Schlangenbad has its assembly rooms, its reading room, and its table d'hôte, but happily no gambling rooms; so that its visitors, like

those of Schwalbach, may be supposed to be assembled together with one object and one view, that of acquiring health and strength; and devoting themselves to those exercises and recreations which are most conducive to such an object. For those who are equal to the exertion, there are the tops of the mountains to scale; then there are little excursions to Schwalbach, to the Rheingau, to the chapel of Raunthal, from the vineyards around which comes the Rauenthaler wine; to the Chausseehaus, the Rumpelkeller, the Nürnbergerhof, the site of the old Gate of the Rheingau, and the Convent of Tiefenthal. Besides its serpents, Schlangenbad has also acquired a reputation for its roses. I must confess to a greater degree of unbelief in reference to the roses than to the serpents; for Germany appears to me to be remarkably destitute of flowers; and, with the exception of oleanders, and pomegranates, and the double convolvulus, I scarcely saw a flower worth looking at throughout my journey. At the table d'hôtes, several flower girls were admitted at different places, but their little bouquets were of the most pitifully miserable kind; even a bouquet which an enamoured swain bought for his ladye love was so excessively common that an English maiden would have rejected it with contempt.

In some of the bathing establishments of Germany, the diet of the invalids is influenced by the Physician of the bath; in others, he finds it more judicious and con-

venient to leave them to the common service of the hotel; and I think with reason, for the habits and diet of these hotels appear to me to be in the highest degree conducive to health. First, there is the early hour of rising, five and six, and never later than seven; then there is the morning promenade, spirited into unusual activity by the music to be met with at most of the baths; then there is the light breakfast, the roll and coffee, generally without butter; then the forenoon promenade; the prescribed drinks at the well, and the bath; then the one o'clock table d'hôte dinner, light and sufficient, without trespassing too much on the powers of digestion; then probably the excursion, the walk, or the ride; then the moderate tea, either coffee or tea as may please the taste, the roll and butter, the outlet or eggs, or, indeed, whatever the appetite or convenience may suggest; then conversation, the journal, the book, music, and bed, the simple couch of rest and restoration of the exhausted powers of the day. But to give strength to my argument, I must describe the fare of the table d'hôte, as it was spread before me for several days in succession, in that quiet retreat of the invalid, the Allée Saal, at Langen Schwalbach.

In the first place, there arrives a soup plate of light potage, something between broth and gravy soup, and not at all unacceptable; secondly, there comes the beef which has been used to make the potage, and which is not in

the least degree the worse for the process ; it is tender, has a pleasant flavour, and is a dish that no man in his right senses can allow to pass ; not that he gets it in a lump, but only in a small dish, containing, when full, some six or eight slices, from which he selects one or two, as hunger may prompt. Accompanying the bouillé, as this boiled fresh beef is called, is a small dish of potatoes in fragments, sometimes smothered in butter ; and so ends the second course. Now, the distribution of food to a long table of fifty or sixty guests, so that all may be served with the same article and at the same moment, is a matter which calls for some degree of ingenuity, and ingenuity and generalship are not wanting to the accomplishment of the object. It is managed thus : six slices for six guests, and two over for the very hungry, or as a perquisite of the dish ; six times ten, sixty guests ; then let there be prepared ten of these dishes, and popped on the table in the middle of every six persons, with a dish of potatoes between each ; then, as the guests help themselves, or the waiter hands the dish to the six for whom it is intended, as soon as you are served and have time to look around, you find that every one else has been served also. Now, at an English dinner, when you glance at the table and see a dish before you, you naturally run your eye along the table, to see what other dishes there may be, or you dislocate your neck, in endeavouring to distinguish what *that* joint at the top of the table can

possibly be ; but at the German table d'hôte no such doubt or inconvenience will arise, for what you see before you is conscientiously repeated all the way along, from the top to the bottom, no more and no less. I feel that I could dilate endlessly on the advantage and convenience of the German table ; but as I am only at the second course, I prefer to sum up with the single observation, that a table of sixty is managed in the most orderly, and quiet, and complete manner by four or five waiters.

Reader, I draw from the life, and nothing extenuate, &c. With the most sublime contempt for preraphaelitism, which I look upon as insanity grafted on a stock of vulgarity and bad taste, I must now confess to a bit of preraphaelitism in this my *third course*. And, first, I will ask you to glanee at a side table, where you will see forty dishes dealt out like cards in four rows, and all regularly following suit : here a row of clubs, next a row of hearts, then a row of spades, and lastly a row of diamonds. Now, look again, and you will see a waiter take up a set of these dishes, and, in an instant, pop them down before the first six guests ; another waiter follows him, and the feast of the second six is before them. Four sets are gone in the hands and arms of four waiters before you can fully realise the process ; there go a second four, and two only remain, which have found their way to their destination in a twinkling, and the side-table is clear. Now I felt it necessary to get

this explanation off my mind before I enumerate what these four dishes are ; and I repeat I only paint what I see, and I don't choose to answer any questions with regard to them ; they are all excellent dishes, but, as somebody says, there be tastes and there be tastes, &c. Dish one, reader, is raw ham, nicely smoked and cut very thin ; dish two, is stewed liver ; dish three, is a mass of carrots cut up into fragments and basted with butter ; dish four, is a greenish pulp of cabbage, very much boiled, and then beaten up into a squash. I shall offer an excuse for one of these dishes, the liver : you are not asked to eat it if you do not like it ; but it stands in the place of a roast or a stew, which is the orthodox third course. Our *fourth* course is a light batter pudding with plums, and sweet sauce ; cutlets in savoury paste ; and not unfrequently a trout or two from the neighbouring "bach" wriggles into notice with this course. Our *fifth* course is generally game of some kind ; to-day, it was hare, cut up into dumps of sufficient size to draw on one's plate, and accompanied with stewed plums. Some took the hare, some took the plums, and some took both. Our *sixth* course was a kind of dessert ; it should have embraced fruit, but fruit is prohibited by the Doctor of the baths. So our dessert was sliced down to some sweet cakes, some stewed pears, and a preserve. Then, in ten minutes after the last dish is on the table, the table is empty, every soul has vanished.

Now I know I shall be assailed by all kinds of questions touching this said dinner, and I shall be asked if really it does not appear to be a large and extraordinary mixture to put in one's stomach; and to all this I can simply answer, that it embraces the first principle of excellence, variety; that although there be many dishes, yet the portion that comes to each is so small, that, at the close of the dinner, the guest is doubtful whether he can say, with Shakspeare, enough! I saw one gentleman at Kissingen who was starving under this regimen; but he was evidently cut out by nature the wrong way of the stuff; he didn't see the use of learning German, and he wouldn't have faith in German dishes. Instead of boldly sticking his knife and fork into everything that came in his way, and testing its qualities like a philosopher, he wouldn't touch it at all if he didn't like the look of its outside; so that if it had not been for a bountiful supply of bread, the poor dear man would have died of starvation; and, strange to say, that man came from the land of the savoury Haggis. For my own part, I religiously ate all that came to my share, and I felt at the close as a man refreshed, just comfortably full, and no more.

Happily, the Doctor didn't interfere with our wine, and so we were permitted to wash down our varied repast with some excellent juice from the neighbouring Rheingau; and, full of meat and wine, we felt at peace. But, before saying grace, I will just spread another

dinner before my reader, done, liked the former, from the life, and then leave him to digest it as best he may. First course, potage ; *second* course, fish and roast beef ; *third* course, stewed hare and truffles, boiled fowl with champignons ; *fourth* course, artichokes, roast partridges, salad, stewed pears ; *fifth* course, light batter pudding with sweet sauce, sponge-cake pudding with wine saucc ; *sixth* or dessert, sweet cakes, grapes, melon, and pears. This was not a Curhaus dinner.

CHAPTER X.

WIESBADEN.

FROM Schlangenbad, a pleasant ride of two hours brought me to Wiesbaden, by way of Biberich, along the valley of the Waltaffe and through the villages of Neudorf and Schierstein. As far as Neudorf, the journey was one of a series of descents along a narrow valley, with the usual beauties of valley scenery, its high beech-covered hills, its bare and picturesque rocks, its sudden closures and equally sudden openings, and the restless, chafing mountain stream that one while dashes onwards with the foaming fury of the wild horse, and another moment is as gentle as the pet steed of a riding school. Passing Neudorf, I came suddenly in view of the narrow plain of the Rhine, with a delicious expanse of lovely scenery ; on my right was the Rheingau, the Paradise of the Rhine, as I have heard it called by the Germans, more probably with reference to a comfortable recollec-

tion of its excellent wines, than with an eye to its picturesque or more soothing agrarial beauties. Nevertheless, even I cannot forget that, away to my right, and at no great distance either, are the sunny vineyards of Rauenthal, of Johannisberg, of Geisenheim, of Rüdesheim, and of Assmannshausen. Then, close at my feet, is the beautiful Rhine, with its picturesque islands and many steam-boats, bestowing upon it the appearance of busy life. Further on are the red towers and cupolas of Mayence; while to my left lies Wiesbaden and the plain of the Maine, with the blue summit of Melibochus rising out of the Odenwald on the distant horizon.

I am reminded also that the expanse of country now before me, and for miles away up the Rhine, was once the bed of a vast salt-water lake, perhaps a small inland sea, alimented by the Rhine, the Maine, and the Neckar; that in the course of time the fresh streams of these river tributaries usurped the place of the salt water, and the briny sea became converted into a fresh-water lake; and that, later still, the fresh-water lake forced itself a passage through the Taunus chain at Bingen, and careered away through the chasm it had formed, until we find it smoothly and gracefully issuing from between the ancient tower of Rolandseck and the castled crags of Drachenfels, dividing its stream before the hallowed altar of the cloister of Nonnenswerth; as though the voice of Religion had uttered to the hearkening floods, "Peace,

be still." The proofs of these phenomena of change in the earth's surface are still visible in the broad plain now before me, the basin of Mayence; and the wheels of the diligence in which I am now travelling are rolling over the several deposits left by the salt water and the fresh, with their traces of living existence, their sea shells, and their river shells; and it is here, in these tertiary strata, and close upon the river stream that I am going to search for sulphur springs; while, nearer to the mountains, at their very foot, I shall find salt waters in abundance rushing up from the bosom of the earth through the unhealed seam, where, at a far distant period of time, the crust of the earth was burst asunder; and there also, but at one spot only, I shall find the trace of a still deeper wound in the substance of the earth, where the warm wave wells perpetually to the surface, as though the bleeding stream could never again be staunched.

At Schierstein, the road to Biberich runs parallel with the Rhine, but at a considerable elevation above it, and through an avenue of apple trees loaded with their weighty crop. The farm labourers were busy in their fields: but what a contrast with the careful farming of Belgium! how abundance begets waste! Because the earth is here rich and prolific, it is carelessly tended; and at least a fourth less is obtained from it than it is capable of producing. I longed to give the clumsy hinds a good shaking, and make them a speech on the advantages of

careful and skilful farming. Perhaps Mr. Mechi will take the hint, and add a little German to his other accomplishments, to enable him some day to give these good people in Germany a lesson in farming, as he has so eloquently and successfully done to our own good people at home. I should have taken the task out of his hands, only that I recollected, just in time, that I couldn't speak German. I wondered at the cultivation of so clumsy a crop as the apple on a good corn-producing soil; but I was reminded by a neighbour, to whom I made the remark, that the juice of the apple was found particularly convenient in giving a body to the low class of wines, and that sometimes it finds its way, where it ought not, into those of a higher class. I shouldn't wonder, said I; but I forbear, without better authority, from declaring it to be a fact.

Bieberich is renowned for the beautiful and elegant chateau in red sandstone, the water-side residence of the Duke of Nassau; and its internal fittings are said to be in keeping with the exterior; its grounds are also prettily laid out, and contain a winter-garden, so beautiful, that a German friend whom I met in my travels, yielding to its fascinations, believed himself in fairy land, until—he began to grow hungry. I dropped from the diligence at Bieberich, into a little open carriage, and now, facing the Taunus mountains, was trundled along to Wiesbaden. The road, as usual, was planted with trees, and presented

three avenues, one for the promenader, one for the riding horse, a kind of Rotten Row, and a middle roomy road for carriages. As we mounted a little rise in the ground, my attention was drawn to a tall, peasant-looking woman in a dark dress, and with two isosceles triangles of black ribbon standing out sideways from the front of her head ; some remnant, as I opined, of the Egyptian worship of the Cow ; for as I believe that every thing in nature, and most things in art, have some reason for their foundation, I can conceive none other for these extraordinary triangles than that of a representation of horns ; but in this instance, of a horn growing the wrong way, that is, from its point instead of its root. I looked hard and enquiringly at the lady, and she returned my look with a graceful bend, no doubt taking me for a fellow worshipper of the Cow ; whereupon I took off my hat with the elegant sweep I had been practising for nearly a week, and looked out for a new object of admiration. I was not long in finding one. High up in my front, rose the group of mountain peaks of the middle Taunus, the Hohe Wurzel, the Rentmuer, the Trompeter, with the Sehläfers Kopf, the rock of basalt called the Keller's Kopf, La Platte, the Hunting Lodge of the Duke, and the Langeberg ; while, lower down, and forming the first steps of the mountain range, were the Neroberg, the Sonnenberg, and the Geisberg. On the Neroberg was a tall, spare-looking building, surmounted by four pointed cupolas at

the corners, and a larger cupola with a high minaret in the centre, all flashing with burnished gold; it was placed in a new clearing of the forest, solitary and alone, unrelieved by trees, or any combination pleasing to the eye; in truth, at this distance I had set it down for some fantastic summer-house in a cockney garden; and yet I lived to regard that building with admiration and respect; admiration of its wondrous beauties of nature and art; respect for its purpose: it is the mausoleum of the late Duchess, the Grand Duchess Elizabeth, daughter of the Grand Duke Michael of Russia, a girl of nineteen. If ever Sir Joseph Paxton should be coming this way, either to sip the waters of the Kochbrunnen or the more genial juices of the Rheingau, we call upon him in the name of good taste to rescue this beautiful monument from the hapless *entourage* amidst which it has chanced to fall.

But now my attention was taken up with the spires and more elevated houses of Wiesbaden, which hitherto, sheltered in a hollow running parallel with the foot of the Taunus, had remained concealed from view. The direction of this hollow is the same as that of the mountain ridge of the Taunus, namely, north-east and south-west; but on the east it rises into a little valley that curves with its boundary hills around the Sonnenberg to the Taunus; and on the west and south, it spreads out upon the plain towards the Rheingau. Here, for more than a

mile's extent, are seen the white villa-like residences of the capital of Nassau, intermingled with the refreshing verdure of groves of trees, basking in the warm sun of a southern aspect, and protected from every wind but those of the south and south-west. If to these sources of warmth we add the heat of the mineral springs, we may fairly believe that Wiesbaden possesses those qualities which must make it an agreeable and delightful winter retreat.

I had just come to this conclusion when my little carriage dashed under an arch-way which spans the road at the entrance of the town, crossed a large square in which a cathedral tower of red sandstone was in course of erection; then passed along two fine streets of tall, handsome-looking white houses, and in a few minutes entered another square, and, in one of its corners, pulled up under the arched entrance of the Hotel des Quatre Saisons. "Numero ein und neunzig" exclaimed a magnificent-looking porter to the waiter, who enquired where the stranger was to be put up; and away I trudged on a pedestrian expedition that seemed to have no end, and I longed for fair Rosamond's thread to help me back again, when the time came, to the place from which I had started. I have a good organ of locality, which never failed me but twice; once when I was in a subterranean hole in Lancashire with an outlet above the level of my shoulders somewhere, but I

tried in vain to find it out, until one of my companions came in search of me with a light ; and, a second time, when I was in an old house of Oliver Cromwell's, with rooms built round a square ; in the latter case, moreover, I was late for dinner, and knew it, but the dining-room seemed at the antipodes, for the further I went the more distant it appeared to be off ; when, luckily, the idea struck me of trying a staircase instead of the endless horizontal on which I had been unavailingly travelling. I now began to feel on my trial for the third time, and I am not quite sure yet that Wiesbaden is not constructed like a rabbit warren ; for, when I at last reached the one and ninetieth, I found it in a different street altogether from that by which I entered the hotel ; so, after giving myself a shake to dislodge the dust, pulling up the tips of my collar to look smart, and brushing up my top-knot à la Brutus to look independent, I cautiously set about unravelling the maze, and fortunately succeeded better than I expected. Somebody says that the Hotel des Quatre Saisons is the largest hotel on the Continent ; and I should be sorry to dispute the proposition.

One of the eccentricities of hotel life on the Continent, and, for ought I know, it may be the same in Great Britain, is that of naming the guests according to the number of their apartment ; thus, at Wiesbaden, I was *numero ein und neunzig* ; at another place, I was *numero*

drei ; and in a third, numero vier und zwanzig. This is all very well, if you remain for a certain time in one place ; but if you move about rapidly, as was my case, it is sometimes puzzling to answer the waiters' question of who you are, in other words, what is your number. It was my custom, as I hope it may be that of my reader, to be satisfied with a half-bottle of wine with my dinner ; and early in my continental career I had given the usual order to the waiter. "A half-bottle of wine for numero drei (pronounced, dry)," said he to the butler, as he passed the order. Numero *dry*, thought I to myself, these fellows must be cutting a joke at my expense ; I ought to have ordered a bottle instead of a half-bottle ; for half a bottle for a numero *dry* seems a very insufficient quantity ; but my sobriety was happily preserved by the sudden remembrance that numero drei was for the moment my nom d'appartement, if not my nom de guerre. And I can believe it quite possible that, after being well shaken up in a series of hotels, a man may forget his original name altogether ; and if unexpectedly brought up before the lord mayor of the town in which he happens to be, he might be reported in the morning paper of the following day as Monsieur Numero Drei, alias Ein und Zwanzig, alias Vier und Neunzig, a gentleman who, having exceeded his half-bottle, was unable to tell his name, and, having no papers, was a person "suspect." Or, in a garrison town, coming

suddenly on the muzzle of a musket with an unexpected "qui vive" bellowed in his ear, I can fancy such an answer as ein und neunzig leading to a discharge of small shot and wadding that might be extremely inconvenient. How I managed to recollect who I was in the course of my rapid journey, is to me now a marvel, and a certain proof, if others were wanting, that circumstances and not genius make the man.

I had become a confirmed coffee-drinker since my arrival in Germany; and truly the Germans support their credit well in the manufacture of that agreeable beverage. So, after a cup of coffee, I sallied out into the town to make a few notes for after reflection. First, casting my eye over my shoulder, I perceived that the Hotel des quatre Saisons, otherwise Gasthof zum vier Jahrzeiten, was built around three sides of a square court; while on the fourth was an archway, over which, on the pediment, was a long legend in Latin in praise of the waters of Wiesbaden. Cold comfort, thought I, for my friend John Bull, who comes for a taste of the wine, and not of the water. Directly opposite my hotel was the theatre, a modest looking edifice; on my left was a street leading into the town; and on my right, after crossing a long, wide, one-sided street of noble-looking houses, the Wilhelmstrasse, was the Curhaus Square, bounded at the distant extremity by the assembly rooms, and on either side by a long colonnaded building devoted to the

stalls of a bazaar. Along the middle of this square were two small gardens divided by a cross walk ; and in the centre of each of the gardens was a fountain of three stages or tazzas. At the summit of the fountain was a rose of water sufficient to supply a fair sheet from each tazza ; and around the stem which supported the tazzas were three circles of gas. I had never before seen an illuminated fountain, and the effect struck me as magical, recalling to my memory a sight never to be forgotten, the first glimpse of Vauxhall on a gala night. There are many things in art, as well as in nature, of which we would give worlds to revive the first impression ; but it is too holy to visit our senses again. I had felt this so often, that, wise by experience, I indulged my passing admiration for the illumined fountains of Wiesbaden ; and, like Captain Wattle, when found, I “made a note on it ;” nor did I spoil that admiration by visiting them again.

Between the illumined fountains and the colonnade was a double avenue of trees, marking out a pathway and a carriage ride, and at the end of these was the sweep before the entrance to the Curhaus. An opening at either side, between the colonnades and the Curhaus, gave a pretty view of ornamental garden ground, with a peep of several elegant villas rising above the trees ; and following a wide pathway past the end of the Curhaus, we come to a broad esplanade, studded with little groups

seated around small tables, drinking their coffee *al fresco*, listening to the sweet airs of a fine band, and watching the misty top of a magnificent jet of water that rose from the centre of a little circular lake to a prodigious height. From the borders of the lake the ground made a gradual ascent at either side ; and I perceived that I was in the mouth of a little valley running due east, the valley of the Rambach, by which the lake was supplied.

It was the next morning, with the lark, that I began the exploration of this little valley, that bounds the hollow of Wiesbaden on the east, and, rising as we proceed, and gathering about it a higher and a higher crest of hill, completely screens Wiesbaden from the winds in that direction. Having swept around the little lake, imitating its betters by sporting a boat on its bosom, that reminded me of an ambitious breast-pin on the hand-broad snow of a Sunday shirt, I found myself in a charming grove, and could perceive on either side between the trees some of those beautiful summer-looking houses that had attracted my attention at my first distant view of Wiesbaden ; while on my left, on the summit of the rising ridge, was the elegant villa of the Dowager Duchess of Nassau. A hundred steps brought me to the end of this pretty grove, but the path was still open and smiling before me, and I continued my way by the side of the mountain rivulet, and, following its serpentine course, sometimes invited to a seat in a

sheltered nook, sometimes attracted to a little ornamental bridge, where the streamlet made a clumsy attempt at a cascade, reminding one of a baby making its first effort to take a leap off a thin volume of the Penny Magazine. But the pathway was beautiful; there had been a thunderstorm the previous evening, but not a vestige of moisture remained on the path; the little mountain rill was swollen, and the grass and trees looked moist, and nature was refreshed.

When we read in the Thousand and One Nights of the wonders of Aladdin's cave or the dazzling beauties of the valley of diamonds, all polished by nature as if they had passed through the hands of the most famous lapidary; when, I say, we read of these surprising wonders, we nowhere find noted, as far as I remember, pathways of spotless Carrara marble. I have heard the gravel-paths of England compared, with good reason, to streaks of sunshine playing on the earth; but I was now in presence of and actually treading on a costly pathway of white marble, no doubt the washings of the abundant detrita of the marble strata that pave the underground of Wiesbaden, and which are brought down by the rains from the neighbouring rocks. And it occurred to me that, if the gravel-paths of England drew their inspiration from the sun, those of Wiesbaden, the Queen of German spas, as she is worthily called, draws the white light of her pedestrian ways from the moon. No wonder,

then, that I was still in full march along this beautiful pathway, although my watch told me that a full half-hour had sped away since I started, and my imagination whispered me that the path was a spirit of the eaves bent on my destruction; that I should go on and on, until at last I found myself in the centre of the Taunus, watching the bubbling of the great cauldron, where the old fellow prepares his saline draughts, and be doomed myself to swallow them for everlasting. Thinking that there must be some truth in this remark, for every five minutes for the last thirty I had felt quite convinced that *that* bend before me where I lost sight of the path must surely be the last; when, at the corner, up it picked itself again like a self-supporting railway, and was off with a leap for another hundred yards, I determined to break the charm by turning round; when, behold, before me, at the distance of a few hundred yards and across some pretty meadows, the road to it beginning to ascend by the side of a wooded hill, rose the beautiful and picturesque ruins of the ancient castle of Sonnenberg. I was unable to resist, and although more distant than in appearance it seemed, I continued my pilgrimage; the scenery around me no longer the witness of cultivated refinement, but wild and as severe as a sunny aspect would permit; plums and pears and apples, the produce of the steep orchards on my right, spread their fallen riches before me; a village and a mill

looked up from the valley at my feet ; and sweeping round the side of the hill, I stood by the walls of Sonnenberg, at a considerable elevation above the eradle-like vale of Wiesbaden.

A tempting invitation to good cheer in the banqueting halls of Sonnenberg was spread before me ; but I preferred to return, not retracing my steps along that charmed pathway that seemed bent on my perdition, not so much from its infinite doublings, as from the unsavoury smells which rose from the serpentine rivulet at one or two points, and which, as a true historian, I am bound to record ; but by the high road, which led along the other side, and not so neighbourly to the stream. The road, as usual, was flanked with apple trees, until I reached the outskirts of the town, where, from the shrubberied ridge on my right, began to rise up the graceful forms of palace-like villas, one amongst them being that of the Dowager Duchess.

Keeping up to the right of the Curhaus and colonnades, I suddenly came on a light iron gallery, recently erected, and intended to shelter the pilgrims to the Koehbrunnen well ; but, although of considerable length and leading from the neighbourhood of the Curhaus, and put up at considerable expense, it has failed in its purpose, on account of being too open at the sides and too high for its breadth, hence the winds and the rain find their way through it with as much ease as if it were

not there at all. However, for the grumblers there is a path on either side, along which they may walk and carry their umbrella if they require and prefer it; and I have no doubt that, with a judicious arrangement of elimbers on the sides of the gallery, its objectionable points may be removed; or a light, bracketed roof might be thrown out at each side from beneath its eaves. But the idea of the gallery is not merely a covered gallery for the comers and goers of the visitors; its chief purpose is to serve as a promenade for the drinkers, who get their glasses filled with the smoking potation at the well, and then walk up and down, sipping the weak beef-tea until they have imbibed their daily dose. It was a little study of diagnosis to walk up and down that covered parade; and the feelings of the physician must be those of the naturalist who has dropped suddenly on an unexplored island. Here is a specimen of liver in a fix; there is a stomach in hysterics; ah! ease of pulmonary congestion, no doubt; anæmia! why, what does she do here? here is our friend chronic rheumatism; that is no doubt neuralgia; and here our enemy the gout. I walked up to the counter, whence the young ladies behind the bar distributed their aqueous riches, and politely asked for a glass. Ah! not very clear, but smoking; saltish, yes; very like beef-broth, yes; that's the stuff. I must admit, that if the question agreeable or disagreeable were put to me, upon mine honour, I

should say *agreeable*. How curious is the instinct of warm and cold in drinks; there are some hardly endurable cold, which are not unpleasant warm; and salt fluids are of this kind. Try a glass of sea water from the source, then try the same warmed; they seem to be hardly the same thing. A lady near me was making a great variety of wry faces at her dose, which her husband was persuading her to swallow. "But it is really not unpleasant," said I; "it is very like bouillon," sipping it again. She looked at me with a little amazement; and then, as if to illustrate that argument is better than force, she drank it all off, as though the thought of its not being disagreeable had never occurred to her before.

Behind the counter, where the two maidens of the spring stood smiling on their customers, was an arched wall, and, behind the arch, a square enclosure of masonry, forming the boundary of a shallow pool of a yellowish white, semi-opaque, steaming water. This is the celebrated boiling pool, the KOCHBRUNNEN; the appearance of boiling being given to it by bubbles of gas which rise from every part of its bed, while its steams, ascending into the air, spread above it like a fleecy cloud. The sides and bottom of the pool are coated with a thick, reddish, ferruginous sediment, and, at its front, and reached by five or six steps, are two shallow vases, shaped like scallop shells, into which the hand-maidens

dip their glasses to supply their visitors. The water is brought directly to these vases in closed pipes ; and the bulk of water exposed to the air being small, it is here obtained in the best possible state for drinking, both as regards temperature and quantity of saline and gaseous contents ; the temperature being 155 degrees of Fahrenheit ; the weight of saline contents, about sixty-four grains to the pint ; and bulk of carbonic acid gas, upwards of ten cubic inches.

And now comes the curious history of the Wiesbaden waters. If we draw a line from the Kochbrunnen, in the direction of the foot of the mountains, and for a distance of fourteen hundred feet, we come to a second spring, called the Shützenhof ; and, on the same line, half way between the two, is a third spring, the Aigle. Now, the Kochbrunnen is esteemed the most important of the thermal springs ; and there is every reason to believe that it is situated immediately over the parent source of the thermal waters ; and further, that the parent source follows the line we have just imagined to be drawn, a line which may be termed the “thermal line.” That the Kochbrunnen is nearest the parent source, seems proved by the fact that the temperature of its waters, as well as the proportion of its saline contents, is greater than any of the others. Its temperature, as we have just seen, is 155° ; that of the Aigle is eleven

degrees less, namely, 144° ; and that of the Schützenhof, twenty-two degrees lower than the Aigle, namely, 122° ; while the Schützenhof possesses one third less of saline constituents.

In addition to the three sources already mentioned, there are twenty-two other thermal springs, all of which may be included by a segment of a circle, commencing at the Schützenhof, and reaching, at its greatest convexity, seven hundred feet from the thermal line. This second line may be termed the thermal zone; it embraces an area of 2,800 square yards, and marks the limit of the thermal springs. Within this area the greater part of the ancient city of Wiesbaden stands; and there is scarcely a spot in its whole extent where, if the ground were opened to a proper depth, the hot saline waters would not rise to the surface. This circumstance at one time gave rise to considerable inconvenience; for as every householder wished to avail himself of the profits of these valuable sources, numerous excavations were made in the ground. It was soon found, however, that new sources could not be opened without injury to those already existing; and lest all should be deteriorated or destroyed, a law was enacted, rendering it penal to open the ground below a certain depth without the express permission of the police. One unfortunate man, having dug too deeply, broke into the source of the Eagle

spring, and being required to close it up, only succeeded after great trouble, and having the prayers of the church to aid him in the undertaking.

The waters present another phenomenon, which follows from the disposition of the springs already stated : it is this ; that, starting from the Kochbrunnen, the farther the springs are removed from it, the cooler they become, and the less saline elements they contain. Thus we find the original temperature of the Kochbrunnen, namely, 155° , becoming less and less as we travel from the thermal line, until it is at last reduced to 104° , and even as low as 90° . While, if we pass the thermal zone, we find an abundance of saline springs, but all cold. Thus, following the thermal line seven hundred feet beyond the Schützenhof, we come to a cold saline spring, the Faulbrunnen ; and, on opening the ground any where within a circle drawn from the Faulbrunnen, at the distance of seven hundred feet externally to the thermal zone, we shall find a cold saline spring, of which there are a considerable number. But it must also be mentioned, that neither thermal nor cold springs occur further to the north-east than the Kochbrunnen.

The springs generally used for drinking are the Kochbrunnen, the Aigle, and the Schützenhof ; but the waters of the other sources also admit of being employed ; differing from those already named only in their lower temperature and inferior riches in saline consti-

tuments. These waters are of the class termed *muriated saline*; that is, their chief component is muriate of soda, or common salt, of which the quantity in a pint of the Koehbrunnen is fifty-two grains; their next largest constituents are muriate and carbonate of lime, three grains and a half of the former and three grains of the latter; and then follow muriates of magnesia ($1\frac{1}{2}$ grain), potash, ammonia, and lithium; carbonates of magnesia, iron (0.04 of a grain), manganese; with traces of barytes, strontian, and copper; sulphate of lime (0.69 of a grain); silicic acid and silicate of alumina; bromide of magnesia (0.02 of a grain); iodide of magnesia, a feeble trace; phosphate of lime (0.002); muriate of lime (0.001); and traces of organic substance. The quantity of carbonic acid gas in a pint is ten cubic inches, and of nitrogen, one tenth of a cubic inch.

The establishments of baths in Wiesbaden are prodigious; they amount in number to about thirty-four, and are added to annually, while the number of baths exceeds eight hundred and fifty. Each bath is provided with two pipes, one which admits the water at the temperature of the spring, and the other, the same water which has been kept in a reservoir to cool. Sometimes, but not frequently, a third pipe may be added for the purpose of diluting the saline with plain water. The baths are found in most of the hotels, in all of those within the thermal zone, and in many of those without

it, to which it is conducted by means of pipes. This is the case with the hotel of the Four Seasons, which, although exterior to the zone, receives its supply from very near the thermal line, as may be inferred from the fact that the water in the bath possesses 136 degrees of temperature. I luxuriated in one of these baths at 92°, and must confess that the reality was more pleasant than the aspect of the water was agreeable; it had a yellowish tint of colour, was semi-opaque, and coated on the surface with films of carbonate of lime, yielded up by the water as it lost its carbonic acid gas and temperature. One of our novelists has somewhere given an account of a monkey who was found enjoying a warm bath of palestine soup, that had been placed in a toureen just outside the kitchen door to cool; and I was unable to banish the idea from my mind, as I gradually unfolded my limbs with enjoyment, like a luxurious cuttlefish, bottle of ink included, in this glorious bath of beef-tea. Close to its source, the spring is said to exhale the odour of freshly slaked lime; but there was none in my tub, nor could I perceive it when I withdrew a wooden plug from the supply pipe and let in a fresh tribute of waters from their abundant source.

I have just mentioned the film of sediment on the surface of the bath; but I may also observe that the deposition of the solid contents of the water takes place very actively and to a large extent in all the conducting

pipes, particularly near their outlet, where the temperature is necessarily reduced by exposure to the atmosphere, and where some of the carbonic acid gas is also lost. This is doubly the case in the baths, where the sediment forms on the surface like the fur on the inside of a tea-kettle ; but the deposit, being semi-crystalline, is harder and rougher in its nature. I had reason to remember this fact by the time my ablution was concluded, and to regret that my skin was not so tough as that of my parallel, the cuttlefish ; for, as soon as I stepped out of the water, I found all my salient points denuded of their cuticle, and, after their immersion in salt water, were beginning to smart pretty vigorously. The bath attendant broke me off a fragment of this deposit, and was obliged to employ for the purpose a chisel and mallet, and to use considerable force. Its chief chemical constituent is, I find, carbonate of lime in the proportion of ninety and three quarters per cent. ; the other components being oxide of iron, carbonate of magnesia, silica, sulphate of lime, and arsenic. The nearer to the source that this deposit is examined, the larger is its quantity of iron, which not only occurs as an oxide, but also as a silicate, phosphate, and arseniate.

Some idea of the abundance of the water poured out by these sources, and of the mass of solid matters which they contain, may be formed from the calculation of Thomæ, that the springs in general use discharge at

the rate of fifty-nine cubic feet per minute, and throw out eighteen millions of pounds of solid matter in the course of the year. They are the most richly endowed with solid contents of all the German waters, and are reputed to possess some curious properties anciently considered marvellous, but at the present day perfectly understood. The property to which I now refer is that of retaining their heat for a long time. Pliny declared that they remained hot when removed from their source for three days; but it is quite true, as was proved by Kastner, that they cool much more slowly than plain water. Distilled water raised to the same heat as the saline waters, fell in temperature in the course of two hours to 96° of Fahrenheit; while water from the Kochbrunnen fell, in the same space of time, to 100° only. Again, in the application of cold, spring water was reduced to freezing twenty minutes sooner than water from the Kochbrunnen. The waste water from the various sources flows into a stream, called, from its heat, the Warmebach; and the Warmebach, a little to the south of the town, falls into the Salzbach, the joint creation of the Rambach, the Kieselbornbach, and the Wellritz; and the Salzbach, flowing through the Mühlthal, or Valley of Mills, ends in the Rhine near Bieberich. It is remarked that this stream never freezes, even during the severest winter.

The waters bestow great warmth to the soil in the thermal area, so much so as to diminish very materially the necessity for fuel in the houses, while they at the same time render the cellars useless for any other purpose than that of giving heat. The amount of elevation of temperature is said to be as much as from six to ten degrees ; while, in the winter, snow thaws immediately, and the soil rarely becomes frozen, even when the season is most severe. In speaking of the thermal waters of Aix-la-Chapelle, I noticed the curious phenomenon of an aquatic plant growing in the hot water. In the waters of Wiesbaden, an equally interesting fact has been noted, namely, the existence of a living animal of the infusory tribe, the *gallionella ferruginea* ; an illustration of that law which provides living beings wherever organic matter is to be found. In the saline thermal waters, as we have already seen by their analysis, organic matter in small quantity is one of the constituents. The elevation of the Wiesbaden thermal springs above the level of the sea is three hundred and three feet ; and above the Rhine, one hundred and ten feet.

The Faulbrunnen may be taken as the type of the cold saline waters of Wiesbaden, and is the only spring used for drinking ; they are brisk and piquante with the gaseous matter, chiefly carbonic acid gas, which they contain, and by no means unpleasant to the taste. Their

temperature varies between 54 and 77 degrees of Fahrenheit, and they are poor in saline elements, in comparison with thermal waters, containing, for the most part, only half the quantity ; thus the proportion of muriate of soda is twenty-six grains to the pint, instead of fifty-two, and the rest in proportion, with the exception of the lime, which is transferred from the muriatic to the sulphuric acid, and the carbonate of iron, which is very much less, being only the six thousandth of a grain, instead of the four hundredth. Dr. Charles Braun, one of the most eminent of the physicians of Wiesbaden, informed me that these cold saline waters were not unfrequently taken by the natives of the place ; and that he occasionally administered them to his other patients, to those who were at the same time taking the thermal baths.

I had not yet done with my exploration of Wiesbaden : being in the neighbourhood of the Faulbrunnen, at the extreme west of the town, I diverged among the hills to a quarry which I saw in operation, and, at the risk of a “ topper ” as the boys call it at school, collected some specimens of the rock, the Rhenish shale, which is supposed to give up its virtues to the waters. Rum-maging about the approaches to the quarry, it gave me pleasure to recognize the botanical Flora of my school-boy days, the tansy and the wild thyme, the origanum, the wild carrot and the wild strawberry, pleasing remembrances of the chalk hills of Kent, and certain indica-

tions of a sunny soil. In my way back, I passed the bare-legged laundresses, in the meadow, pursuing their operations in the daneing brook ; and then I came upon a pair of heavy oxen, doing their best to keep their feet, while they were dragging a plough down a steep hill-side. Miss Martineau remarks upon the sulky expression of countenance of the camel, and no wonder, poor drudge ; but I have never yet seen an animal in harness, saving the horse, and perhaps the ass, that did not look humiliated at the imposition ; this is remarkably the ease with the ox, who, although he evidently does not like it, yet does his work all the same, earefully and thoughtfully. The ploughman had no assistanee but his voice, and the elapper of that was incessant. I stopped to make a short note of the words, or rather the sounds, which he addressed to his beasts ; and as they seemed perfectly to understand him, I suppose I may regard this, if not strictly Oxonian, as a specimen of the language of the Ox :—Oit, that is, “ fort,” the equivalent of the Equine language Geeh ; the rest I could not unriddle ; it was as follows : ahrr ; aate ; woito-here...woot woo-hoi...g’hoi...slaekmm...aicoo...yaře—a eurious assemblage of greasy gutturals.

I now pitched myself into a little earriage, for a visit to the Greek chapel on the Neroberg. From the plateau was a beautiful view of Wiesbaden with the plain of the Rhine, that made me wish to be off again. But

we are now drawn up at the door of the chapel, which, although small, looks sufficiently imposing on the spot, and is a strict model, as I was informed, of the chapel of the Greek church. Tap, tap. No answer. Are you sure it is open, coachee? Yah, yah, tap again. And accordingly I tap, tap, tapped; the half-door opened slowly, a tall, grave-looking person in black, with a pale studious face, stood before me; head usher to the charity school, said I to myself, stepping in. Not so fast, if you please, said he; and he pointed to a funny collection of old slippers that formed a heap close to the door. I caught his idea; the holy of holies of Mecca, thought I, and I poked my feet into a pair of felt slippers. That over, I began to march into the chapel, when off flew my slippers, and I found that the only way of keeping them on was to skate in them on the polished marble that formed the floor of the edifice, as it did the face of the whole interior unoccupied by paintings. It was an octagon building, with two doors; and as I gazed around, below and above, I thought I had never seen any thing so richly beautiful. The light is admitted from above by invisible means, and is soft and sufficient, and, reflected from the gilt interior of the dome, gave the idea of transparency. The floor was paved with beautiful marbles, and the side walls were also of highly polished marble, each block being a study and an object of admiration in itself. Before me, as I made my first plunge forwards in

my skates, or rather in my slippers, was an elegant altarpiece, richly decorated, and containing in its numerous panels some fifteen or twenty carefully executed oil paintings, representing the sacred characters of Scripture; the heads were admirably painted, particularly those of the women, and were in excellent taste. All tended to impress on the mind that grief for one object had assembled them together. Opposite the principal door, and in a small raised chapel to the north of the building, was the tomb of Elizabeth, late Duchess of Nassau; it supported a reclining figure in white marble, the image of the late deceased, a young creature of nineteen. The statue was well executed, representing the sweet repose of death, and the tomb was enriched by sculptured figures at the corners, and bas reliefs at the sides. As I turned to quit the holy spot, I repeated inwardly that I had never before seen any thing more beautiful, either in perfection of detail, or in general effect. The Greek Chapel of Wiesbaden is an architectural and artistical gem.

CHAPTER XI.

WEILBACH. SODEN.

I AM unwilling to disturb the sanctity of my recollections of the Greek Chapel of Wiesbaden ; and therefore, as I have called for my bill, reckoning they name it ; well, reckoning, if you will ; it is pleasant to pick up in a foreign tongue the language of our forefathers ; I will just make way for my further recollections of that beautiful town, at the top of a new chapter. My ecstasy at the vision of the illuminated fountains was not dissipated when I entered the front door of the Curhaus. Two servants in magnificent liveries received me in an ante-room ; and stepping through a door-way at my side, I found myself in one of those splendid rooms that are seen no where so grandly as at the Baths of Germany. The walls were richly decorated with gilding and sculpture, the hangings of the windows and the luxurious velvet sofas did credit to the taste of the upholsterer ; the ceiling and magnificent cornice displayed the talent

of the painter ; and the panels reflected in brilliant mirrors the dazzling chandeliers and the gorgeousness of the whole. Only one thing seemed wanting, a carpet en suite, which the parquet of polished oak ill and coldly represented. What a room for the reunion of the elegant and the beautiful ! I shall ever remember the great Hall of Guildhall, in the memorable year of the Exhibition of 1851 ; when the silver-tongued trumpets of the Heralds announced the presenee of the Majesty of Britain among her people, and when, smiling with the pleasure and gaiety of the scene, and leaning upon the arm of the Prince Consort, the QUEEN made her promenade around the room. How the hearts of her subjects beat thiek in the royal presenee ; even Gog and Magog were ready to laugh for gladness, and only refrained from the expression of their joy, lest the concussion of their voices should bring the building about the ears of their visitors. But what a contrast are the beautiful halls of Wiesbaden ! a hell, a common hell, without even the capital H. And then the Curhaus has its reading room, its concert room, and its ball room ; but as, alack ! my daneing days are over, I think that daneing must be a very sour employment ; and yet, Reader, I have seen the day when I could and did.

If there be one thing which, more than another, is a real blessing to scribblers, it is the break of a paragraph. Whenever we get a little confused, or a little too commu-

nicative, all we have to do is to break off abruptly, as I did in my last. But I was about to mention that I passed the previous evening in the agreeable society of Lord Moriarty and Dr. Charles Braun, one while listening to the silver chimes of literature and antiquarian research, and another to the golden precepts of health, and the delectation of mineral waters; and I was obliged, I am sorry to say, towards midnight, to turn out both my friends into waters of a less pleasant, if of an equally refreshing, kind, the torrent of a thunderstorm, which had followed me from Langen Schwalbaeh, which had made a grand display there the evening before, and now repeated the performance. "The proprietor of the hotel, Dr. ——," I unfortunately missed the name, "wishes to be presented to you," said the waiter, as he placed my morning coffee on the table before me. "I shall be most happy to receive him, and enjoy his conversation while I swallow my coffee," said I; for I was just starting for Frankfort by the eight-o'clock train; and accordingly I had the happiness of felicitating the Doctor on dispensing, if not better, at least more generous cheer to his patients than Doctors in general.

"There is just one thing that I have forgotten," said I to my note-book, as I settled myself in the carriage of the Taunus Railway; "there is just one thing that I have forgotten, and that thing is the peculiar geological formation, the *Taunus shale*, which supplies the saline

springs with all their elemental components, excepting the salt." The Taunus shale is not, as was formerly supposed, an argillaceous deposit containing tale and an excess of muriatic salts; but a distinct mineral substance, interspersed with fragments of quartz, and termed *sericite*. It is of a yellowish green colour, laminated, smooth, and crumbles to pieces on exposure to the weather. In chemical composition, it consists of about one half of silicic acid, one fourth of clay, one tenth of potash, one fifteenth of protoxide of iron, less than one fiftieth of soda, one seventieth of magnesia, and a small quantity of lime and phosphoric acid; in other words, it contains all those saline ingredients which are met with in the waters of the springs; but fails to account for their proportions, there being more soda and more lime in the waters than the sericite sufficiently explains. These latter are, however, derived from another source; the soda from the basalt so abundantly dispersed among the rocks; and the lime from the calcareous formations of various kinds.

I was now careering away on the Frankfort line of railway to Soden, taking in my way Kastel, the small fortified place opposite Mayence, Hochheim, Flörsheim, Weilbach, Hattersheim, and Höchst, turning northward from the Main, just before it receives its tributary stream, the Nidda, which falls into it close to Nieder Nied. On my right was the Main, with its light barks

skimming over its surface, and vineyards spreading down to its very brink ; on my left was the plain of the Maine, on which was drawn up, as if up for review, the mountain range of the middle Taunus, which I now scanned from end to end. While along my road, I found, if not *food* for thought, certainly *drink* for reflection in the vineyards of Hochheim, the *home* of the cool, delicious hock, and in the cold sulphur springs of Weilbach and Nied.

Along this line of railway and at a very short distance from the stream of the Maine, are three cold sulphur springs, namely, Weilbach, Nied, and another close to Frankfort. They are situated in the plain itself, taking their origin from the tertiary deposits of the basin of Mayence, and receiving their supply of sulphur, which comes to them from the sulphuret of iron, or iron pyrites, so abundant in the soil, in the shape of sulphuretted hydrogen gas. Weilbach lies at the distance of about a mile to the left of the railroad, a short way beyond the station of Flörsheim ; it possesses a large bathing establishment, with a few dwellings grouped about it, and a grove of trees ; while, farther back towards the Taunus, are some pretty wooded hills. Its climate is mild and warm ; but, from the want of trees, the country immediately around it is too much exposed to the sun. It has none of the dazzling beauties of the mountain and valley scenery we have just visited ; but,

I doubt not, will be found by those who have occasion to resort to it a healthful seclusion. If they wish for scenery, a horse or an ass, or even their own legs, will carry them to the adjoining hills.

The level of the spring, at Weilbach, above the sea, is four hundred and twenty feet; the water is limpid like crystal, but lets fall a slight yellowish white sediment, consisting of carbonate of lime and organic substance, when left to stand; and it gives out a feeble odour of sulphuretted hydrogen, although possessing in combination a considerable proportion of that gas, namely, nearly three cubic inches to the pint. The temperature of the water is 56° of Fahrenheit; the quantity emitted by the spring, in the course of twenty-four hours, two thousand four hundred and thirty cubic feet; and its chemical composition as follows: besides the sulphuretted hydrogen already mentioned, a pint of the water contains nearly six cubic inches of carbonic acid gas; four grains and a half of carbonate of soda; two of carbonate of lime; nearly two of carbonate of magnesia; and a small quantity of carbonate of strontian. Its muriates are: muriate of soda, two grains; muriate of magnesia, one grain, with a trace of muriate of potash; it possesses only one sulphate, that of soda, which amounts to barely three tenths of a grain, and the same quantity of silex, with nearly a grain of organic matter, and traces of alumina and phosphate of lime.

The waters of Weilbach are reported by the physician of the spa, Dr. Roth, as being useful in all cases of congestion of the organic system, and as being well borne by the stomach. They reduce the bulk of the body without producing weakness; but are unsuited to cases where emaciation already prevails, particularly to consumption. Their especial action appears to be on the liver, aiding its circulation, increasing its secretion, and helping nature to relieve herself, through that important organ, of those ponderous juices that weigh upon the heart. Baths of this water lower the action of the pulse, and are therefore calmative or sedative, exerting a soothing influence over the nervous system and nervous derangements.

At Weilbach is to be met with that curious contrivance of the ingenuity of man, *mud baths*. The mud used for the purpose contains an abundance of muriate and bicarbonate of soda, and this is added to the sulphur water in preparing the bath.

SODEN lies under the shelter of the Taunus mountains, at not more than three miles from the Maine, just where the latter receives its chief tributary, the Nidda. The little town is situated in a hollow or basin, at the entering angle of two low hills, the first steps of the Taunus; and, as the ground rises towards the plain of the Maine, it is completely surrounded, excepting on the side of the west, where its basin communicates with the plain at the foot of the hills. Though further out in the

plain than Wiesbaden, and therefore enjoying a more free distribution of air, it is much higher, being one hundred and fourteen feet above the level of that town, namely, four hundred and thirty-seven feet above the sea. A branch from the Taunus Railway runs up to the suburb; and the basin is divided by the high road which crosses the mountain chain from the plain of the Maine on the south-east, to the plateau and north-western side of the Taunus. The old portion of the town is built in the bed of the basin, stretching horizontally towards the west; while the new portion occupies the line of the high road and the slopes of the two little hills already mentioned. Altogether it is a pleasant retirement for invalids, and its climate of a most healthful and genial character; it has none of the cold currents of the valleys, nor their chill mornings and evenings; its temperature is uniform, it is free from fogs. The air is neither too dry nor too moist, and it seems well adapted for pulmonary patients, who visit it in considerable numbers, especially from the north of Germany, Poland, and Russia; while, with the inhabitants of Frankfort, it is a favourite invalid resort.

The permanent population of Soden is small, about nine hundred souls; but in the summer season this number is greatly increased by the influx of visitors. The houses in the new and higher part of the town are for the most part pretty villa-like residences, dispersed

among gardens and orchards; those in the foreground fronting the high road, and those behind planted tastefully in every advantageous nook and position. The hotels are extensive and roomy, and there is also a large and commodious Curhaus devoted to the baths and also to the lodging accommodation of visitors. A glance at the place shows what is the fact, that heated gaming rooms and suffocating concert and ball rooms, where the pride, the vanities, and the vices of man are reared and fostered, are not to be looked for in Soden, and only those must seek its retirement to whom the beauties of nature and the calm regularity of domestic life communicate an enjoyment.

“Is Dr. Thilenius at home?” said I, after knocking at the door of a pretty villa covered with climbers and profuse in verandahs, situated in a little leafy garden, nearly at the top of the inhabited part of the road. It was clear to me that the Doctor knew how to select for himself a cheerful and healthful residence. “He is out,” said the servant who opened the door; “but, Madame Thilenius is within;” and I was immediately ushered into the presence of that lady and her daughter, a handsome, intelligent, and pleasing girl of about twenty. “My husband usually leaves home soon after breakfast, and returns about three, the interval being devoted to his patients,” said Madame Thilenius; and so I was made acquainted with the mode of practice of the Physicians

of the Baths, a mode which I afterwards found was usual among them. The ladies led me into a little drawing-room, which formed the centre of the front of the house, and where the soft cushions of an ample sofa and easy chairs invited repose and conversation. Before me, as I sat, were glass doors, one of which was open, and beyond the glass doors was a little *al-fresco* room, a verandah portico, wherein chairs and two small tables told their story of rest after dinner and the labours of the day, and the placid enjoyment of the cigar, an association from which the ladies in Germany are not banished, as with us ; which, by the way, is almost the only word of praise that tobacco deserves ; and I regret to have to say so much, and that, little as it is, I intend to spoil, by remarking that if the German ladies did not make a virtue of necessity, and tolerate the cigar, they would never see anything of their husbands at all.

As the Doctor was out, I was glad to accept, for my *eicerone* and guide, one of his sons, a lad of fifteen or sixteen, spending his holidays at home, and a very intelligent and valuable guide he proved himself to be. First, he led me to a spot behind the *Curhaus*, where the boring for hot water, by means of an Artesian well, was in operation. The engineers had reached a depth of two hundred feet, and a rise in the temperature of the water to 81° of Fahrenheit, and were bringing up fragments of marble and quartz from the bottom. Then we descended

the road, bordered by gardens on both sides, and by villas in the midst of gardens on the right, and entered, on the left, a garden prettily laid out in promenades, with seats placed here and there for the accommodation of the drinkers of the waters ; and here, in the midst of an opening among the trees, appeared the circular rail, the sunken pit paved with red sandstone, the steps of descent to its level, and the two or three open basins, that experience now told me denoted the presence of a treasured spring. Moreover, the table, with its group of glasses, and the tin cruet stand at the end of a stick, as well as the clear element in the basins, through which bubbles of gas were eddying to the surface, all served to prove the supposition without a doubt. The spring before which I stood was number 6, A, B, and C.

I may here remark that the springs at Soden are very numerous, those at present enclosed amounting to twenty-three, and all rising to the surface within an area of four hundred feet. They are saline and chalybeate, and no doubt proceed from the same source, although differing among themselves in temperature and quantity of saline and gaseous elements. In temperature they range between 52° and 75° , therefore they may be considered as cold and tepid ; and the higher temperature of some of the springs has led to the hope that hot water, as at Wiesbaden, may be obtained, by sinking a well of suffi-

cient depth ; although, at the same time, the geological position of Soden, so far from the higher mountains, shows that the depth of the sources of heat must necessarily be very considerable.

The quantity of the principal saline element, namely, muriate of soda, in the waters of Soden, is large, varying between twelve grains (No. 6, C) the “drinking spring,” and one hundred and fourteen grains (No. 4) the Soolebrunnen, or saline well. The proportion of earbonate of iron varies between one hundredth of a grain (No. 1) the Milehbrunnen, or milk well ; and more than nine grains and a half, the Soolebrunnen ; while the amount of carbonic acid gas ranges between sixteen and seventeen cubic inches, the Soolebrunnen and Milchbrunnen ; and fifty cubic inches (No. 19) the Champagnerbrunnen, or champagne well. To the taste, the water is brackish or salt, somewhat bitter, but brisk and sharp, like soda water ; a water very possible to drink, when thirsty, without much repugnance, but not likely to be selected as a “bonne boueche ;” the most devoted winebibber would not sit long over his wine, if refreshed by no more genial beverage than that which issues from the champagne well.

The springs are commonly distinguished by their number, as 1, 2, 3, 4, 5 ; then we have 6 A, 6 B, 6 C, 7, and so on to 19. But some of them have also special

names; such as Milk spring (No. 1), probably from its milk-warm temperature, 75° ; Warm spring, also from its temperature, 72° ; Saline spring, from the large quantity of salt which it contains, namely, more than one hundred and fourteen grains to the pint; Sour spring, from its acidulous taste, the double result of low temperature, 52° , and smaller quantity of muriate of soda, conditions which favour the developement of the taste of the carbonic acid; the William spring; Sulphur spring; Drinking spring; Meadow spring; and Champagne spring. The springs chiefly used for drinking are seven in number; namely, the Milk spring; Warm spring; Saline spring; William spring; Drinking spring; and Champagne spring. The Milk spring and Warm spring being weakest in muriate of soda ($17\frac{1}{2}$, 26), are employed for delicate constitutions, and as a preparation for the stronger waters. The Saline spring, the most rich in muriate of soda and least in carbonic acid gas, is used as an aperient water, with the view to relieve congestions of the head, chest, and organic system. The Warm spring, the Saline spring, and the Milk spring, are administered to invalids suffering from affections of the chest, but are diluted for that purpose with milk or whey. The William spring, Sulphur spring, Meadow spring, and Champagne spring, are suited to affections of the digestive system. The Sulphur spring, having a flavour of sulphuretted

hydrogen, has the credit of being less exciting to the circulation than the William spring; and the Meadow spring, of being best suited to torpor of constitution; while the Champagne spring is resorted to when abundance of carbonic acid gas is desired, the amount of that gas in a pint being upwards of fifty cubic inches. For baths, the water is selected from the Saline spring, William spring, Sulphur spring, and Major spring; the temperature usually ordered being from 81° to 93°.

The springs are scattered through the town in a direction from the north-east to the south-west; lying parallel with the foot of the Taunus, like the springs of Wiesbaden. The most elevated, No. 6, A, B, C, consisting of the William spring, Sulphur spring, and Drinking spring, are situated in the exercise garden, to the east of the mountain road, and near the Curhaus; No. 7 is on the same side of the road, but lower down; the rest follow the line of the main street of the village on the other side of the road; No. 5, the Sour spring, is chiefly used by the poor people of the neighbourhood; No. 4 and 3, the Saline spring and the Warm spring, are near each other in a little strip of ornamental ground, at the side of the main street of the village; the Saline spring, which is in much request, having its paved court and stone well; and No. 3, the Warm spring, issuing from the rock by means of a pipe, and falling into a basin;

No. 2, the Winkler spring, is a feeble rill in one corner of the narrow court-yard of a small house a little further on, and is evidently not in use. No. 18, the Meadow spring, said to resemble in taste and properties the celebrated Ragozi, of Kissingen, lies to the left of the village street, in the rear of its houses, and is without ornament ; while No. 19, the Champagne spring, is served up on a large tray of sandstone, and issues by means of a tap from a brazen vase.

Having explored the waters of Soden, I was now eager to form some notion of its local beauties of scenery, and indulge an instinct which has always been a ruling one with me, to get to the top of everything, from a milestone to a mountain or a profession ; and my young guide kindly indulged my whim. We took the mountain road towards Neuenhain, and then, diverging to the right, came to the summit of a hill crowned with three lime trees, and called Die drei Linden, or, les trois Til-leuls. The view from this spot was very beautiful ; looking towards the north, we saw, at a short distance, the village of Neuenhain, with its tall church tower ; a village made interesting to me by the possession of muriated saline waters, like those of Soden, and a chaly-beate spring. Behind Neuenhain, and rising on either side, were the mountainous masses of the Taunus ; on the left, the Rossert, the Staufen, and the range of the

middle Taunus; on the right, the towering peaks of the higher Taunus, the two Feldbergs, and Altkönig; while, in the middle distance, were Eppstein, Königstein, Falkenstein, and Cronberg. Turning my back on this magnificent picture, the vast panorama of the plain of the Maine lay at my feet, bordered on the horizon by the blue outlines of the Vogelsberg, Spessart, Wetterau, Odenwald, and Hardt mountains, with the old friend of my student days, the magnificent Melibochus, standing up in bold relief above the rest.

Descending from the Drei Linden, the city of Frankfurt exhibited its towers and gardens, and the beautiful meanderings of its river; while, among the villages to its left and right, could be traced the little beacon of curling vapour that marked the busy track of its railways. We had now reached a lower hill, which overlooked the town of Soden and its immediate environs, and which, from its lesser pretensions, in comparison with the neighbouring mountains, is called die Nadelküssen, literally pin-cushion; while its pleasant pathways, somewhat stony and rough, by the way, and its very acceptable seats, may be supposed to carry the illustration further, and exclaim to those who visit it, if not "welcome, little stranger," at least "welcome, gentle stranger." I took the greeting in good part; and, while I drew in deep draughts of the fresh and exhilarating air which breathed

over these hills, threw a parting glance at the pretty sequestered delta of bright villas and luxuriant orchards that Soden calls its own ; and it was not without a feeling of regret that I bade adieu, after prescribing for his cough, to my young friend and guide, and the kind lady and her daughter, who had been for the time my agreeable friends and hostesses.

CHAPTER XII.

CRONTHAL. HOMBURG.

ON my return to the house of Dr. Thilenius, I found, standing at the door, a little carriage that was to convey me to Homburg, a journey which I accomplished leisurely in two hours. The road skirted the foot of the Taunus, bending in and out to avoid the hills, and affording charming points of view of Königstein, an ancient fortress and picturesque village, lying high in the mountain pass between the middle and higher Taunus; Falkenstein, a romantic ruin, standing out from Altkönig, like his jutting beard, and said to be one of the seven finest points of view in Germany; the grey, frowning "old king" himself, Altkönig; the town of Cronberg, with its chateau, planted on a high hill in front of Altkönig; the green sequestered valley of Cronthal; the ruins of Schönberg; and the villages of Ober Höchstadt and Oberursel, through which the road lay. On my path, were vineyards planted on the sunny slopes, cultivated fields where corn and potatoes were the prin-

cipal crops; moist meadows, rich with the purple bloom of the autumnal crocus; and anon, bits of forest of Scotch fir; while, along the whole distance, the road was fringed with its avenue of apples; and the dry bank which bordered the fields, alive with hordes of the little hamster mouse. Away to my right, were the turrets and pinnacles of Frankfort; and in my front, the long roof-capped ridge of Homburg, headed, on the north, by its round, white, telescoped and turreted castle tower; just the kind of tower which, as a schoolboy, formed the flank of all my landscapes; and a fac-simile of that famous old tower whence Sister Ann looked out for aid against the barbarities of Bluebeard.

CRONTHAL is situated at the foot of the greater Taunus, just as Wiesbaden is placed against that of the Middle Taunus. It is nearer the mountains than Soden or Neuenhain, and occupies the head of the little valley of the Sauerbornthal, where two smaller valleys, descending directly from the mountain, meet. It possesses five enclosed mineral springs, of which two are principally employed, namely, the Stahlquelle or Steel spring, and the Wilhelmsquelle or William spring. The waters are highly charged with carbonic acid, 33 and $29\frac{1}{2}$ cubic inches; contain a fair dose of muriate of soda, namely, twenty-seven grains; and a fraction of a grain of the carbonate of the protoxide of iron; the Steel spring, six tenths of a grain; and the William spring, five hun-

dreths of a grain to the pint. The other constituents of these waters are, muriate of magnesia, nearly two and four grains; sulphate of soda, one grain and a half, and eight tenths of a grain; carbonate of lime, three grains and a half, and five grains and a half; carbonate of magnesia, less than a grain; and alumina. They come under the denomination, therefore, of an "acidulous saline chalybeate;" and their temperature is respectively, 53° the Steel spring, and 61° the William spring.

Cronthal is distant from Hochst about four miles, two from Soden, and three quarters of a mile from Cronberg; it possesses an establishment of baths; a Curhaus, performing the duties of an hotel; and its scenery presents the ordinary type of the quiet valley, surmounted, towards the hills, by forests of oak, chestnut, and beech, and, lower down, begirt with orchards of fruit trees. The geological structure of the ground is a base of Taunus shale, from which the waters issue, and a surface deposit of clay and peat. The direction of the valley is north and south; it is rich in mineral waters, which are found wherever the ground is opened; while at the foot of one of the hills is a spring of perfectly sweet water.

The mineral water is clear and bright, and sparkles with minute bubbles of gas when poured into a glass; it is fresh, brisk, and agreeable to the taste; the Steel spring having a slight astringency, from the presence of its larger quantity of iron; the William spring saltish, from

the absence of the astringency of the iron, and from its carbonic acid being in a more fixed state. The physician of the spa, Dr. F. Küster, notes this fact particularly, and relies upon the William spring when he wishes to secure the effects of a slow evolution of carbonic acid gas in the stomach. He remarks that this water retains its freshness longest when exposed to the air, although not so sparkling to the eye when first drawn from the well. Dr. Küster, whose interest in the water was first excited by their beneficial effects on himself, also notes the crackling noise which the little bubbles of gas make as they burst on the surface. He says that both waters are easy of digestion; but the difference in the proportion of iron and carbonic acid gives him the choice of a milder and a stronger water; a simply alterative, and a tonic remedy. He gives them the credit of a cleansing action on the mucous membrane; allaying irritation of the air tubes, by causing an increase of secretion; promoting appetite, by stimulating the nerves of the stomach; and improving the condition of the mucous membrane of the rest of the organic system. These waters, like most other mineral waters, are objectionable where there exists a too great fulness of the blood-vessels; and, in these cases, if not contra-indicated entirely, he reduces them with milk or whey.

For baths, the waters are used either at the ordinary temperature of the William spring, 61°, or heated by

artificial means to 95°, or any intermediate degree. But these springs bring to our notice another medicinal agent, which we have not before seen; namely, carbonic acid gas baths. Carbonic acid gas is so abundantly evolved by the waters and by the soil, that it has been found practicable to collect and administer it, either as baths partial or entire, or as a *douche*; and either in the state in which it issues from the earth, or heated to any degree that may be required. It is stimulant in its action, and produces a prickling sensation in the skin; it is also used as an application to the eyes and ears: in the former case, it has been known to remove films and opacities, the result of chronic inflammation; in the latter, to improve the secretion of the ear-tubes, or restore secretion where the natural moisture of the ears is dried up. It is also found effectual in curing ulcerations of the skin which resist ordinary means. Dr. Küster claims for the waters of Cronthal a *solvent* effect, as well as an *alterative* action, and regards them as suitable to diseases attended with thickenings and depositions of various kinds, as well as to gout and general debility.

Jogging along the road through a beautiful country in a light open carriage, creeping up hill, walking down hill, and trotting along the plain; one while tasting a mineral spring, another examining a fragment of rock from a heap brought to the road-side for its repair, or stopping to gaze on some beautiful point of view, or make

a note in our tablets, on a charming afternoon in early autumn, is a specially agreeable occupation ; but it is one also, unfortunately, which must have its end ; and so thought I, as my coachman made his way by some mysterious roundabout road into the jaws of a most uninviting steep street, at the north end of Homburg. It occurred to me that we were making this detour around the castle, to bring me under the guns of the old white telescope of a round tower, if it had any, and demolish me if I showed any intention of running away ; and I began to fumble in my blue bag for my passport, when, happily, coachee suddenly turned the flank of an old wall, and I found myself among the habitations of men and women, and, judging by my nose, I should have said pigs also ; but as I did not see any of the latter, I leave that unsaid.

Some tall, good-looking peasant women, in dark dresses, with a snow-white handkerchief simply laid on their heads, were returning from the town ; while others, with a basket head-dress, instead of the graceful handkerchief, had been selling their butter and eggs, and making a few purchases for the children and master at home. Then our way was obstructed by a posse of boys, cutting out of school, with every variety of costume and gesticulation common to student life in an infant school ; each boy carried on his shoulders a knapsack of goodly

dimensions, and being anxious to know the contents of their havresacs, I found them full of books, with a slate, ruler, and entire armament of learning. How boys of that class could require so many books, and what the nature of these books could be, and the instruction they received at the school, were reflections which threw me into a brown study, from which I only awoke when called upon to descend from my carriage at the Hessian hotel nearly opposite the Curhaus.

I sealed the staircase of the Hessian hotel to numero something or other, only refraining from holding my nose out of courtesy to my landlord, and at last reached my room, from the window of which I had a good view of the old monarch, Altkönig, with the two Feldbergs peeping over his top-knot. "Our hotels at Homburg," said the first inhabitant I met, "are remarkable for their badness; and unfortunately we are not likely to have any improvement, as the proprietors have a notion that the visitors will come, whatever the accommodation may be; and must come, whether they will or nay. It is quite true that they escape into private lodgings as soon as they are able; and there are most excellently off in every way." I was told that a party of English lawyers had taken possession of the Hotel des Quatre Saisons, and changed its name, or had it changed for them, into "Hotel of the Quarter Sessions." Picking up these

morsels of information as I descended the staircase of my hotel, I soon escaped from its unsavoury confinement, and made my way into the street.

Homburg appears to be essentially one long and rather broad street, running upon an elevated ridge from the old castle into the country in the direction of Frankfort, with a few side streets crossing it at right angles. The old part of the town is clustered around the castle; while, at the opposite end, the buildings are more modern, larger, and of elegant proportions. At about the middle of the street, on the left hand going from the castle, is a kind of square, constituting the frontage of a handsome building, the Curhaus, the carriage sweep and middle avenue being ornamented with orange trees. The entrance to the Curhaus is enriched with a handsome portico, from which the visitor passes into the hall, and thence into a magnificent room, used as a concert and ball room; while, to the right and left, in the wings of the building, are, a large dining room, gaming rooms, and reading rooms, all glittering with gold and ornament, and suggesting the one idea of the architect, gorgeous adornment and lavish expenditure.

Escaping from the Curhaus by the opposite door, we come upon a terrace on which are groups of visitors seated around small tables, chatting, smoking, and sipping coffee; while, over the low parapet in front, on a little shrubberied lawn, are seen similar groups, intermingled

with loungers and promenaders of every age. To the right of the lawn is a music pavilion, and further still, a little planted knoll, surmounted by an elegant garden pavilion of iron trellis work, over which climbers of various kinds are beginning to mount. Continuing our walk to the end of the lawn, we come upon a road bounded on either side by a row of trees, and, beyond the road, is a park-like garden of considerable extent, prettily laid out in walks and beds of shrubs near the road-way, then, spreading out into a carpet of turf, and gradually subsiding into meadows in their wild and natural state. At the bottom of the hollow is a small lake of water, and beyond the lake the ground rapidly rises into a ridge of low hills, covered with dwarf forest trees. Standing near the road, and looking towards this hilly ridge, we find the garden bounded at the sides by a row of elegant houses; lower down, it spreads beyond the line of the houses; while avenues of poplars and groves of trees mark the position of the springs; and still further off, the low ground leads away, to the left, to the mountains of the Taunus, and to the right, to the plain of the Maine.

Under the guidance of the English physician of the spa, Dr. Prytherch, I now commenced my exploration of the springs. Our way led us along the garden ridge by the side of the planted road I have just been describing. The beds of flowers and shrubs were enclosed by leafy

festoons of the wild vine and the grape vine ; and under our feet crackled the small fragments of white marble which I had so much admired at Wiesbaden, and which give such extreme beauty and nicety to the pathways. Lower down, amid the rank wild grass of the recently redeemed marshy meadow, a lady of my acquaintance was plucking a bouquet of the autumnal crocus. Our first visit was to the KAISERBRUNNEN, or Emperor Spring ; near which is situated the old Curhaus. The Kaiserbrunnen rises in a small well in the centre of one of those sunken courts which are the common residence of the better class of mineral waters ; it issues from a pipe and flows over into a large vase. The stream is not steady and uniform, but rises in jerks, like a pulse, and every few minutes leaps up to the height of several inches, constituting in a miniature degree what is commonly termed a "sprudel" or jumper ; of which a magnificent example is met with at Carlsbad in Bohemia. The leaping and irregular pulsation of the water is due to the successive accumulation and escape of carbonic acid gas, which is present in this spring in large quantity. The water of the Kaiser is brisk and saline, and is said to contain sulphuretted hydrogen ; if this be so, Liebig has failed to notice it in his analysis, and we must infer that, if present at all, it must be in very small quantity. The court of the Kaiser is floored with a handsome pavement, and partakes of the riches which flow from the

gaming establishment of Homburg, like Lazarus, the crumbs of the rich man's table. From the Kaiserbrunnen, we diverged to the left, to a little shaded poplar-circled grove, where, all in gloom, we found the LUDWIGSBRUNNEN, or Sauerwasser, evidently out of favour; and in a corner, like a naughty school-boy, was the BADBRUNNEN, used, when used at all, as its name implies, for baths. To the right of the Kaiserbrunnen, lay the STAHLBRUNNEN, or Iron well, at the bottom of a little terraced basin, furnished with its paved court, and a pretty zig-zag rail surrounding it. The taste of the water is pungent and highly ferruginous, and less agreeable than that of the Kaiser. Immediately outside its rail, is a spring of perfectly sweet water. These four springs all lie close to each other, in the left-hand corner of the garden.

Starting from the Kaiserbrunnen, and following an avenue of high poplars in the direction of the vale for a distance of somewhat more than a quarter of a mile, we come upon the KURBRUNNEN, the celebrated Elizabeth Well. Here again we have the sunken pit and the paved court, and all the elegance of appointments which may be supposed to be due to the Elizabeth spring, holding rank next to the Kaiserbrunnen. The water was sharp, brisk, pungent, and saline, and left a strong ehalybeate flavour in the mouth, reminding me forcibly of the waters of Soden. Beyond the poplar avenue,

leading from the Kaiserbrunnen to the Elizabethbrunnen, and screened from view by a thick shrubbery, are the native meadows of the vale; and here, in the midst of the marshy meadow, is a new spring, the produce of an unsuccessful attempt to reach the level of hot water by means of an Artesian well. This spring is rich in iron; but, from its taste and appearance, appears to contain less saline matter and carbonic acid gas than the others. It rushes up in an abundant stream from a depth of one hundred and sixty feet, and completely stopped the operations of the engineers who were engaged in boring the well. Not far from this, however, the high wooden shed which protects the machinery of a boring apparatus shows that the engineers are not to be deterred in their purpose, and, *coute que coute*, hot water shall be brought to the surface, if by any power of man it can be reached. There can be no doubt that hot saline water would be a great advantage to Homburg, not only as placing it on a footing with Wiesbaden in this respect, but also as serving to correct the coldness of its waters, which are their only, but nevertheless great, defect. The level of the springs of Homburg above the sea is six hundred feet. Returning from the marshy ground of the vale of the waters to the town, we came upon another spring, the so-called NEW SPRING, which is situated at no great distance from the Curhaus, and which pours forth for one hour daily an abundant supply of carbonic acid gas.

I have enumerated seven sources at Homburg; six springs, and one used only for its carbonic acid gas. In chemical composition, these waters are all similar, belonging to the class of muriated saline chalybeate; they are cold and saline, pungent and ferruginous in taste. All contain carbonic acid gas, which gives them their *acidulous* character, the proportion varying between twenty-two cubic inches to the pint (Badbrunnen), and fifty-five cubic inches (Kaiserbrunnen). All contain the saline element, muriate of soda, varying in quantity from seventy-nine grains (Elizabethbrunnen), to one hundred and seventeen (Kaiserbrunnen); and all contain the carbonate of the protoxide of iron, the Elizabethbrunnen least, namely, somewhat less than half a grain; and the Stahlbrunnen most, namely, nearly one grain. When used as baths, the waters require to be heated artificially, and for that purpose are conveyed to the bath establishments and hotels in enormous casks.

The carbonic acid gas spring possesses the peculiarity not uncommon among mineral springs, of rising only once a day, but with exact regularity, continuing active for the space of an hour, and then ceasing altogether until the next day. Dr. Prytherch has used the carbonic acid bath with considerable advantage in some instances of paralysis and loss of function and sensibility of the skin; and has also applied it in chronic affections of the eyes and ears, producing results similar to those

noted in connection with the carbonic acid baths of Cronthal.

Looking at the chemical composition of the waters of Homburg, and their close similarity of constituent elements, Dr. Prytherch makes a remark which is applicable to other springs as well as Homburg, and to the various chief sources, as compared with each other; namely, that the chemical composition is inadequate to explain the difference of effects of the waters, differences so great, for example, as those which are found practically to subsist between the Elizabeth Spring and the Emperor Spring. We are fully aware of this fact, in the practice of medicine, and know how singularly medicines are modified, not only by difference of proportion, but also by combination, by more or less complete solution, and by sub-division. I cannot offer a better example of this, than the instance of the Cronthal springs, of which that containing the largest quantity of carbonic acid gas is the first to part with it; while that which contains really the least, retains it the longest. Here, then, we are in a position to select a water retentive of carbonic acid gas, or the reverse; and yet, in every other particular, similar in chemical composition. It would be unreasonable to expect these two waters to act exactly alike on the human organisation.

CHAPTER XIII.

FRANKFORT. NAUHEIM.

To enjoy travelling alone, a man must be as full of joy and good spirits, as some of the waters I have just been describing are of carbonic acid gas ; they must sparkle upwards from his soul, and go off at every point of his surface with an audible crackle, like bubbles of gas, and their supply must be inexhaustible. My power of generating these lively companions is pretty good ; but a few times on my journey I found myself yearning for a more corporeal friend with whom I could communicate my thoughts ; and this feeling was never so strong as at Homburg, and afterwards at Baden ; where Art seemed to triumph over Nature, and where the holiness of the Temple of Hygeia was desecrated by the offensive habits and vices of fashionable life. In these fits, an unaccountable restlessness came over me, and urged me, almost in spite of myself, to continue my journey. But it was not so easy to get out of Homburg as to get into it ; a diligence started for Bonames, one of the stations

on the Frankfort railroad, about seven miles distant, at eight o'clock in the morning; but, as all the places were taken, there was no alternative but to wait for the next, at twelve o'clock. I passed the morning in a quiet survey of the springs and grounds in which they were situated, and in a sulky promenade through the Schloss gardens, that looked gloomy and damp, an appearance which a large pond embowered in trees, and once the moat of the castle, did not tend to dissipate.

As I returned from my stroll, I found myself in the midst of a market, in which the peasant women, with their clean white handkerchiefs hanging loosely on their heads, were displaying their farm produce; their butter and eggs, and vegetables and fruit. Some melancholy looking dogs, harnessed to small carts, had brought a considerable part of this produce into the town, and were now lying on the ground resting themselves and their shafts, and scowling their discontent at the service which was required of them. Not even the rattling of drums and squeaking of pipes, which ushered the army of Hesse Homburg into the town could induce them to prick up their ears, nor inspire them with a desire to quit their ignoble calling and join the array of martial glory which now drew up before the guardhouse, and, after a few right about lefts, was released from its morning duty and dispersed.

At last the diligence made its appearance at the

front of the Poste, and taking my seat by the side of a fat native with a cigar in his mouth, I was soon listening to the music of the coachman's whip and the rumble of his wheels, as we sped on our way to the railroad. Once there, and disengaged from our lumbering conveyance, a few whistles of the "dampf maschine" brought us to the free city of Frankfort. It was fair time, and all was bustle in the streets, as I made my way through the horse market and the Parade Square to the hotel of the Roman Emperor, in the Zeil or main street of Frankfort, the line of boundary of the ancient town. I have before remarked on the enormous size of the Hotels in Germany, where so many persons take up their permanent residence; and the hotel of the Roman Emperor was one of these magnificent buildings. I had gone there for the purpose of being introduced to an Italian princess, with whose medical history I had become interested on my way, and who had preceded me by a few days; and, as the house was full in consequence of the fair, I was led up to a lofty apartment on the fourth story, whence I had an excellent view of the busy street below, and a considerable portion of the town.

In the evening, after the table d'hôte dinner, I visited the booths of the fair, and made acquaintance with some of the most interesting features of the city; for example, the House in which Goethe was born, and the statue erected to the memory of the great poet in

the Promenade Square. The booths in the fair were devoted to eatables, prints, books, and plaster casts, all of the common kind and suited to the lowest class of persons, shooting with air-guns, and exhibitions. Shooting with the air-gun seemed to be a favourite amusement and attracted a crowd of connoisseurs; sometimes the mark was a figure in motion; at others, it was a wonderful cottage, that opened its doors as soon as it was struck, and displayed all its internal arrangements, from the cellar to the attics. Another mark of preference was a wicked woman, who was cruelly beating her husband. Then there were the wonderful performances of a troupe of apes from Holland, a circus, a family of acrobats from Hamburg, an Egyptian wizard, a white negress, and Swiss giantess. With so tempting a bill of fare, I was at a loss to decide which of all these wonders of nature and art I should select for an hour's pastime, and was obliged to cut the gordian knot by stepping into the first that presented itself, the booth of the aerobats. There I found an elevated stage, a row of musicians in front, and several tiers of seats around the circumference. Two boys were assisting at the overture, whose loose coat and absence of any covering to the neck struck me as peculiar; but they shortly afterwards cleared up the mystery by retiring from their drums and appearing in the character of distinguished actors. The audience were quiet and observant, and seemed to be

much delighted with the jests of Mr. Merryman, whose humour was of the broadest kind.

The next morning, my tenth day from home, I was early afoot and strolling through the town; inspecting the churches, the old unfinished cathedral of red sandstone, the promenade which encircles the town and occupies the place of a fortification, if ever such should be wanted; the banks of the Maine, along the town side of which a handsome wharf is in course of erection; then I crossed the Maine by an old red sandstone bridge, with a red sandstone statue of Charles the Great as its centre, and entered the Sachsen Hausen, the Southwark, on a small scale, of Frankfort. The Maine is about half the width of the Thames at Waterloo Bridge, and flows with a sluggish stream. From the side of Sachsen Hausen, I had a good view of the whole breadth of the town, culminated to the right of its middle point by the cathedral. I have not quite made up my mind as to whether I like the red sandstone for architectural purposes; it is the chief building material in the upper region of the Rhine. Mayence is built of it; so is the Castle of Heidelberg. We saw it in the construction of the new cathedral erecting at Wiesbaden; the ducal palace at Bieberich is of red sandstone, and here we have it again in Frankfort, not only in the public buildings, but in its bridge and newly erecting wharf. It certainly gives a warmth to the appearance of a town, but it

seems to have no relief; there are no lights and shadows, all is red, red, red. And then it evidently does not stand the weather well; it chips and crumbles with the wet, and frost destroys the delicate carving and masonry, and gives the buildings a worm-eaten appearance. One regrets to see the elegant ornamental work of the Palace of Bieberich breaking and crumbling away; and the same feeling is awakened on inspecting the Cathedral of Frankfort. The tower of the cathedral would be handsome if finished; it is lofty, with long windows, and richly ornamented with miniature towers at the angles; but, in its present state, it is quaint, rather than beautiful, from being closed at the top by a temporary cupola, reminding one of an old fellow at his toilet, who has donned his scull-cap and seated himself to read in the midst of his books, instead of brushing himself up and putting on his curled and powdered wig.

Strolling through the suburb of Sachsen Hausen, I was struck by the luxuriance of a grape vine growing over the doors of two adjoining houses, in the street running parallel to the river; it formed a kind of verandah canopy; and the grapes were as fine as those commonly seen in a greenhouse in England. The country around the town is not very attractive; there are orchards and arable land, with groves of trees, and a few handsome country houses; but it was flat, and my eye had become so accustomed to mountainous scenery

that it now felt its want. I was amused at seeing a boy hunting with a black cat for mice in a field at some distance from the town ; but the cat, although enjoying the sport, exhibited none of the qualities of her relative, the hunting tiger of India. She had no notion of giving chase to her prey, but crouched in an attitude of concealment, and made ready for a deadly spring, while the boy put up the game. I now crossed the Maine by the bridge of the Maine-Neekar Railway, and proceeding for a short distance along the promenade at the west end of the town, arrived opposite the Gallus Thor, at the stations of the three railways which reach Frankfort by this side, namely, the Maine-Neekar, the Taunus, and the Cassel. My present business was with the Cassel Railway, and taking a "billet" for Nauheim, I was soon on my route to the latter place.

The railway stations on the Frankfort and Cassel railway are constructed of red sandstone, frequently prettily streaked like the bottles of coloured sand which are brought from the Isle of Wight, and over several of their doorways the grape vine flourished in rich luxuriance. At some of the stations I remarked the same taste for floriculture prevailing as at our own ; and among others of the plants in particular favour, was one called the double convolvulus, bearing a flower very much resembling the double oleander, of a light pink or flesh colour. The wild flora resembled that of warm chalky

soils like that of Kent; and there was an abundance of apples hanging from the trees. The horns of the guards had given place to the tones of a musical bell; and where a stop of a few minutes was made, an abundant buffet was open to the traveller, the favorite solids being freshly cooked cutlets, sausage meat between lumps of bread, and a kind of large flat baked cake covered with slices of plums or apples; while the fluid was chiefly Bavarian beer. At one of the stations, a place called Schwalheim, the peasant girls brought glasses of sparkling mineral water to the doors of the carriages. The water was brisk, fresh, and gaseous, like seltzer water, with a slight chalybeate flavour; they obtained it from a well in the midst of a wood, and called the well Ludwigsbrunnen.

Beyond Bonames, the station nearest to Homburg, we come to a village called Vilbel, where, upon the rising ground, was a pretty parish church. Then we reached Friedberg, an old town with fortifications and dry moat, and one of those curious round towers designed after the telescope pattern. Here also was a handsome viaduct, spanning a pretty valley, and the scenery began sensibly to improve; there were low hills, with the ruins of an ancient castle; then the ground rose, and we entered a cutting, while the outlines of the Taunus grew more and more distinct. A little further, the long, high, dark walls of the Salines, or salt works of Nauheim,

come in view, and my journey was for the moment at an end.

From the railway, the ground sinks towards Nauheim, which is approached by a road planted within the last few years with an avenue of trees; on either side, the ground is laid out so as to form an ornamental garden; then it rises again, and continues to rise towards the hills in the back-ground. NAUHEIM is new, its gardens and grounds are new, its houses are new; it is bright and sunny and without shade; but preparations are making for rendering it an agreeable residence. It was here that I saw that wonderful sight, that of itself repaid the trouble of the journey, a column of water, nearly six inches in diameter, snowy with foam, bursting from the earth with invincible force, and rising to a height of twelve feet above the level of the ground. Its upward progress is checked by a metal shield, and from the concavity of this shield its waters are dashed down into a wooden well, throwing the whole into a state of commotion. And this impetuous torrent pours on perpetually, day and night, without rest, and will continue unchangeably for years, probably as long as the world lasts; it is one of the earth's safety valves, and its obstruction might be attended with danger.

All around this remarkable fountain are immense masses of stalaetic deposits, some from the caverns and conduits by which these waters reach the surface, others

around the bushes employed for filtering and evaporating their salt. Crossing a little bridge and a turfy lawn, I came to the house of the physician of the spa, Dr. Beneke. He was out; in fact, was that day quitting the place for the season, and would probably be on his way to Frankfort by the next train. I did my best to supply his absence by betaking myself to the principal drinking well, protected from intrusion and interference by a paved court and rail. The water was clear, fresh, highly gaseous, saline, and ferruginous; reminding me of the waters of Soden, which, in chemical composition and medicinal properties, it nearly approaches. There are three Sprudels, small, large, and Freidrich Wilhelms, with a temperature respectively of 84°, 90°, 99°; and several cold springs, of which the Kurbrunnen and Salzbrunnen are the chief.

Having succeeded in seeing all that most interested me in my review of the mineral spas, I returned to the railway, and was fortunate enough to find Dr. Beneke and his family on their way to Frankfort, there to separate for a time, the lady and her children to visit Soden, and the Doctor, after leaving them there, to proceed to Kissingen. As Kissingen lay directly in the route which I had proposed for myself, and in truth was my next destination, after Nauheim, the last of the Taunus springs, I joyfully agreed to be his companion, and to start the next morning by the six-o'clock train. On our way, Dr.

Bencke informed me that Nauheim was a growing bath establishment ; that its waters were acidulous, muriated, saline, and ehalybeate ; in fact, like those of Soden, but somewhat more easy of digestion, and milder in their operation ; that every effort was being made to attract invalids to the spot, and that the natural beauties of the place and the country around suggested the hope that these efforts would not be in vain. During the season just ended, a considerable number of visitors had sojourned there, and many of them had returned home greatly improved in health.

“ It has been hitherto believed,” said Dr. Beneke, “ that saline waters are stimulating, when used as baths ; but a series of carefully conducted experiments have shown that the reverse is the case, that they are sedative and calmative, and that they gradually reduce the quickness of the pulse.” Their ferruginous contents, which throw down a deposit of reddish ochre on the sides of the well, and of the conduits through which they pass, render them also valuable as a tonic in cases of debility, and particularly in anæmia, or deficiency of natural blood.

The next morning I bade farewell to the Roman Emperor, with only one regret, that of having been unable to pay my respects to Danneker’s great work, his *Ariadne*. To leave Germany without seeing it, would have been sacrilege, and a beautiful September morning, not

many days later, enabled me to repair the omission. I was on my return journey, eager to get home, and, in a state of doubt, had strolled out of the town by the Friedberg gate, where a clumsy monument commemorates the sacrifice of the brave Hessians who defended this point at the storming of the town by Napoleon in 1792. If the poor Hessians fell victims to the goddess of war on this spot, Art has received almost as severe a shock in the attempt to record the event in stone and bronze. Behind this monument, on a beeline, is a low chapel-looking building, which I was led to believe contained the object of my search; a cab stood at the entrance, augury of hope; I turned the handle of the door; the door opened; I was in the temple of Ariadne. The room was circular, and surrounded by objects of sculpture; some placed in niches, others on pedestals and brackets; and, on one side, hung a broad crimson curtain. Something told me, for I saw no living thing, that behind that curtain I should behold the fair form of her whose beauty had already enamoured my imagination. I passed through the opening of the curtains, and stood before Ariadne. Ariadne is still sitting gracefully on her favourite panther, resting her elbow, as of old, upon his curly head, dropping her right arm, with perfect simplicity, on her beautiful limbs, and crossing her feet in the attitude of complete repose; while her head is still looking up in admiration of the pink silk which lines

her room, and the rich crimson curtains that defend her solitude. At the moment I emerged into the presence, two graceful women were standing in admiring contemplation of the beauteous statue, and improved considerably the general effect of the scene. To these ladies I was indebted for my present opportunity of seeing this glorious work of art, and, in the presence of the goddess, I now give them thanks; nay more, I confess that for ever, Danneker's Ariadne will be incomplete in my mind without the association of their elegant forms and memory.

Ariadne has a square compartment and recess in the building, devoted to herself; this recess is lined with pink silk, and receives its light from above, also subdued by a curtain of pink. The pink hue cast upon the white marble gives it a warm tint, and somewhat likens it to the living skin, and, with the subdued light, throws an atmosphere about the statue most favourable for its contemplation. An attendant moves the pedestal around, so that every point of view may be gone over leisurely and with ease. The figure is full of repose and grace; a perfect, lovely woman; only the head offends, from being classical rather than natural; but perhaps Ariadne's head was classical; and then she has a classical neck, straight, and round, and ugly. Now I have done with my criticisms, excepting one: the marble is discoloured at various points with black streaks, and this, I suspect,

must have suggested the idea of the subdued light and pink atmosphere. These few words of detraction over, I may now yield nobly to the fascinations of the lovely work; the form, the ease, the modelling of the body and limbs are perfect, and bear the stamp of nature. Danneker must have possessed a glorious model, and the art and power to follow the vestiges of Him that made her.

CHAPTER XIV.

KISSINGEN.

OUR route to Kissingen, from Frankfort, lay across the northern part of Bavaria, in the direction of the river Maine; sometimes following the course of the stream, and at other times crossing the country between its loops; the principal villages and towns in our way being Wilhelmsbad, Hanau, Asehaftenburg, Löhr, Gemünden, Würzburg, and Schweinfurt. From Frankfort to Löhr, the country presented little attraction; there was the usual succession of arable land, meadows rich with the autumnal crocus, orchards with trees laden with apples and plums; here a black bog, and there a forest of Scotch fir; while the horizon was girt by the blue frame of the Vogelsberg, the Wetterau, and the Rhoen mountains to the left; and the Spessart, the Odenwald, with Meliboehus, to the right. While the terraced declivities of the low hills facing the south, were planted with vineyards.

Wilhelmsbad is about eight miles from Frankfort, and is what is called a Bain de luxe ; in other words, a country place, where pleasant scenery with springs of negative medical value are the excuse, and gay society and gambling the attraction. The Germans are fanatics in baths ; and when they seek for change of air, it is always to baths that they bend their thoughts ; just as, with more reason, we Islanders turn ourselves towards the sea, and revel in the bracing air of Scarborough or Thanet. To them the sea is inaccessible, and therefore the baths take its place ; but they degrade the innocence of rural life by gambling ; while in England a purer taste inclines us to an almost arcadian simplicity of enjoyment, our donkeys, our pic-nics, our broad hats, and our Margate slippers.

Whether my friends considered that the atmosphere was unwholesome, and were inclined to improve it, or whether they were disposed to add incense to the balmy breath of the morning air, I am unable to say ; but after a few miles had been accomplished, first one and then another dived into the abyss of an enormous pocket and produced a cigar, then came the light, *germanice*, fire ; and soon followed smoke, smoke, smoke, in dismal un-fragrant clouds. It is a desperate sin on an English railway to smoke ; but here—listen, directors of railway companies—a neat little brass box is fixed to each window of the carriage to receive the ashes of the cigar. When

will you pay so delicate an attention to the comforts of your smoking passengers? Never, I hope. But you might make your earriages more easy than you do. I wish you could see a second-class earriage on the Bavarian Railway; I have too great a respect for your nerves to think of putting you into a first-class. Imagine what an animal a man must be that would fit one of your carriages, his shape precisely that of a chair turned up-side-down. And a curious delusion you are creating for future antiquarians; for the thigh-bone that would fit one of your seats, must be that of a giant; and historians of future ages, should the petrified remains of a railway earriage ever be preserved, will gravely repeat that giants must have lived in those days, or, ourang-outangs. Once or twice I put my head out of the window to get a gulp of fresh air, and for an instant I thought I saw a pair of oxen at the plough smoking; but it was not them; a second glance showed me that the smoke which curled around their crumpled horns arose from a pipe that their driver was puffing.

Hanau is a large town, with numerous churches; and Asehaftenburg is also of good size, and has a fine castle with some beautiful towers. Beyond Asehaftenburg, the country becomes hilly and rises at either side, until we find ourselves in a beautiful valley of the Spessart mountains, with hills and rocks and villages placed in highly picturesque positions. The scenery

increases in beauty and wildness as we reach Löhr, and follows us past Gemünden and Carlstadt, and throughout the rest of our route to Würzburg. From Gemünden to the latter place, we pursued the line of the Maine, adopting the cutting which years of industry had enabled it to make through the solid rock. For a long distance the railway was laid on a terrace by the side of the river, and the bare, precipitous, grey rocks of the Spessart range rose by our side high into the air. Gemünden is usually selected as the starting point for reaching Kissingen, and the road is said to be highly picturesque and beautiful; but as my friend was pressed for time, we preferred a longer railway journey to gain a station nearer to Kissingen, namely, Schweinfurt, and lessen the distance of our carriage drive. Nothing can exceed this portion of our journey in varied beauty; at one point, the sides of the hills were covered with vineyards, while the lower grounds were clothed with luxuriant orchards; then came a village, with its pretty church, or a fine old ruined castle perched on a romantic hill, as at Carlstadt; and then the mountain pass would close upon us with its bare, precipitous, grey limestone rocks, whose summits seemed lost among the clouds.

Closet two ladies together, and we know, at least we pretend to know, the subjects of their conversation; bring two doctors together, and it is quite certain that they will soon be plunged over head and ears in physic;

nor is it so surprising, the interchange of thought and experience upon a matter of surpassing interest must be mutually advantageous to both. My friend and I were deep in medical argument, when a gentleman from the opposite corner, the only remaining passenger, approached : "I perceive, gentlemen," said he, "that you are physicians ; I am one also. Allow me to introduce myself. I am Dr. Pierre Brasso-vanyi, of Temesvar, in Hungary. I have been making a lengthened tour throughout Europe, to see the medical institutions. I was at London and Edinburgh, and now I am making my way home ; but am sorry that I shall be obliged to bid you adieu at Würzburg." We naturally did our best to console our friend for the loss he was about to sustain, and fell to work to canvass the merits of the divers universities of the world and Würzburg, which we were fast approaching, in particular. Würzburg is one of the most ancient of the universities of Germany, and has long been famed for the celebrity of its professors. One of the latter, Scanzoni, had the distinguished honour of being lately selected to attend the Empress of Russia through her confinement ; he visited her at St. Petersburg, and watched her for a month at Kissingen ; altogether, he devoted two months to her service, and was presented, in return, with the magnificent sum of 70,000 roubles, about £12,000. Our informant said that Scanzoni was amazed at the grandeur of the fee ; but he

richly deserved it; he has distinguished himself highly in his city and his country, and has earned the European fame of which the imperial favour is only the crowning honour. We were becoming enthusiastic on the merits of old Würzburg, and should doubtless have given its professors and Scanzoni some glowing toasts, had not the bottle been wanting; when, with a scream and a complacent shake of its sides, the train drew up at the station at Würzburg.

Würzburg has all the gravity, not to say dulness, of appearance that becomes a seat of learning. There were spires, and cupolas, and domes that had smiled over the castigation of many a poor boy, whose only fault was not being the machine his tutor wished to make him; and then, to keep the ignorant at a proper distance, there were high city walls and a broad drawbridge-spanned moat; while, high up in the air, also, I suppose to keep the boys in order, or suppress the too free bubbling up of the student temperament, there was a fine old castle, bristling with towers and embrasures. I should fancy that in these sober times the castle was no longer wanted for its original purpose; but it might still serve as a capital lesson for the drawing class, enjoying as it does a most picturesque position, and might still have the pleasure of knowing that it was the cause of much sour occupation and weariness. A vociferous adieu from our

good friend of Hungary disturbed my mental soliloquy ; and, as the country became stupid and arable, and we began to be voracious, I have nothing further to record, until our arrival at Schweinfurt.

I was now for a short time on the finest piled velvet of travelling ; nothing to think of, no arrangements to plan, and none to make. My friend found a carriage just ready to start for Kissingen ; and then, ordering an excellent dinner, that the coachee might not have too light a weight for his money, we sat down to a capital repast, washing it down with some delicious wine out of one of those squat, square-shaped, flat bottles, the Bocks-beutel, that make the eyes of the connoisseur sparkle, from a previous experience of the known goodness of its contents. Well, at last the platters were cleared and the bottle was drained, and we began to think of our carriage and the waters of Kissingen. The road was hilly and long ; and at the end of two hours and a half, after a tedious descent, we reached the little town of Kissingen, and drew up in front of its Curhaus.

Opposite the Curhaus is a grove of trees, planted in avenues so as to afford pleasant promenades, in which the drinkers are enabled to take exercise in the immediate vicinity of the springs. On the further side of the grove is a colonnade, with a fine assembly and ball room ; and behind the colonnade and cursaal or assembly

room, a garden laid out in pleasant walks. In the grove itself are the three principal springs; on the right, the MAXBRUNNEN or Sauerbrunnen, a cool, refreshing, acidulous, sparkling water, tasting like excellent Selters water; on the left, the far-famed RAGOZI and the PANDUR, in a deep, paved court, roofed over with a light iron-work pavilion. The water of the Ragozi is a brisk, sparkling, saline chalybeate, 52 degrees of temperature; and that of the Pandur is similar, but somewhat weaker. These three springs, though situated so closely to each other, differ considerably in the quantity of their saline constituents; for example, the Ragozi contains nearly seventy grains to the pint; the Pandur, sixty-one; and the Maxbrunnen, only twenty-eight. The largest proportion of these solid elements is muriate of soda, then carbonate and sulphate of lime, next muriate of magnesia and potash; of carbonate of iron, there are two tenths of a grain, with a small quantity of bromide of magnesia and a trace of iodide of magnesia. In the Maxbrunnen there is no iron, bromine, or iodine; but more than half a grain of nitrate of potash, and a small quantity of phosphate of lime. The charge of carbonic acid gas in the three springs is forty-eight cubic inches for the Pandur, and nearly forty-two inches for the Maxbrunnen and Ragozi.

We now put ourselves under the direction of Dr.

Diruf, and were taken by him to a remarkable spring, about a mile up the valley, the Soolensprudel, and to the salt works, or Salines. Our way led along the side of the valley, upon a kind of terraced road, bordered by an avenue of apple-trees. On the right, the ground rose suddenly to a hilly ridge, and was covered with orchards; on the left, the valley swept gently across to the opposite side, being laid out in orchards and meadows, with some arable land near the roadway. Along the middle of the hollow ran a row of willow trees, with a pathway by its side, one of the numerous promenades for the visitors; and beyond the promenade was a small river stream, the Frankische Saale, which falls into the Maine at Gemünden.

At the Salines, we found a bath house of considerable extent; and, in the middle of the central hall of the bath house, under a skylight in the roof of the building, is the Soolensprudel. The SOOLENSPRUDEL rises in a kind of well, lined with wood, so as to resemble a huge wooden vat, and is covered in with a glazed top, which serves the double purpose of permitting the Sprudel to be seen, and, at the same time, acts as a gasholder. Looking down into this vat, we see a large column of water, white with foam, rushing madly up through the water already filling the tub, and throwing it into impetuous waves; while the torrent in the middle con-

tinues madly seething and foaming like a thing possessed. It was a sight grand and wonderful to look upon, and one that I could have gazed at for hours without tiring. But the most curious part of the history of this Sprudel, is, that, after boiling up with fury in the manner I have endeavoured to describe, for some hours, it will suddenly sink down and disappear, vanishing into the earth with a moaning sigh, as though it were some spirit of the deep struggling to get free, yet, obedient to its master's command, returning back to the deep caverns of the earth, its eternal prison house, when the order is issued for its recal.

The water of the Soolensprudel is said to resemble that of the sea, not only in chemical composition, but also in temperature (67° F.) ; and the quantity of saline constituents is one hundred and seventy-one grains to the pint. The large building in which we were then standing, was erected for the purpose of turning this magnificent column of water to use ; to heat it for administering in the shape of baths, to apply it to the body in the form of douches of every kind, and to collect its carbonic acid gas, and use that in baths or douches, either alone or combined with steam or heated air ; while the greater part of the water is carried away from the vast tanks in which it is first received, and conveyed by steam machinery to the top of an extensive

evaporating and filtering apparatus, and converted into salt.

While discussing the manifold appliances of the Soolensprudel, we were joined by the physician of the establishment, Dr. Pfein, who conducted us through the bath rooms, showed us the various contrivances for utilizing the water, explained to us its effects, and then led us to the engine room, where, in the most admirable order and condition, we saw the steam-engine which gave life to all the operations. In one of the douche baths, he showed us a column of water as thick as one's arm, rushing up with great force from the bottom of the bath to a height of fifteen or twenty feet, while smaller douches could be thrown against a person in the bath in every direction, either vertically from above, or laterally upwards or downwards; then there was a radiating douche, and a needle douche; but the most remarkable of all the douches was a broad radiating sheet of water, which, cutting the water of the bath at the point where it was brought in contact with it, lifted the surface into waves resembling those of the sea; the wave bath. The baths are heated to the required temperature by means of steam introduced into a chamber beneath them; and the period of remaining in the bath is regulated by sand-glasses, measuring twelve minutes, or the steam itself may be applied either partially; or completely to the

entire body. The contrivances for applying carbonic acid gas were equally perfect ; conveying it either alone, or heated by hot air, or mingled with steam ; and it could be employed as a general bath, or locally to a part, as to the eyes, or the ears, or to a limb.

Quitting the bath-house, Dr. Diruf was good enough to indulge my propensity to get to the top of the highest reachable elevation, and at the same time gratify my curiosity to see the mode of preparing salt from the Soolensprudel, by taking me to the top of a wooden tower, which formed the centre of the filtering and evaporating apparatus for the salt water. There are three of these high walls of bushes, each a quarter of a mile in length ; and the water is raised to the top by means of the steam-engine, and is received into a large tank, which serves the double purpose of supplying the saline, and creating a high level and pressure for the ascending and other douches in the bath-house. The bushes are closely packed in two walls, and along the top of each wall is a wooden trough, which conveys a stream of water from the tank the whole length of the wall. The trough is provided at short distances with holes, through which the water falls in small rills upon the bushes, and then trickles down the bushes to a shallow trough placed at the bottom. While filtering down through this wall of bushes, exposed to the air

and the winds which blow freely through them, a good deal of the water is evaporated, while that which remains deposits its calcareous matter on the twigs of the bushes, and reaches the trough below as a saturated fluid. Three times it is subjected to this process, passing successively down the double wall of bushes of three evaporators. In the first, it leaves behind its iron, and the bushes are reddened by the ferruginous deposit which forms around them; in the second, it leaves other saline and earthy salts which have escaped the first filtration; and in the third, the saline fluid has acquired considerable density, and is nearly pure; in a state, in fact, to be submitted to evaporation by heat in the neighbouring factories.

From the top of the tower I had a superb view of the valley of Kissingen. The valley runs from the north to the south, in the direction of its stream, the Frankische Saale; it is a mile in width, five or six miles long, and six hundred and twenty feet above the level of the sea. It is bounded on the west by a fine mass of hills, forming part of the Rhoengebirge range; the hills nearest to Kissingen being the Kreutzberg, the Aldenberg, and the Maxruhe. On the east is a lower ridge, presenting an elegant outline, and headed, near the town, by a picturesque conical peak, and rugged mountain crest surmounted by the beautiful ruin of an ancient castle. In

the broad plain, at the foot of these hills, Kissingen, with its clean, white, bright-looking houses, its gardens, its stream, and its bridge, is placed, and has a most enlivening and attractive appearance; while the neighbouring heights are accommodated to the uses and amusement of the visitors by their pathways, their pavilions, their fine points of view, and their pleasant resting places.

CHAPTER XV.

BOCKLET. BRUCKENAU.

DR. DIRUF, the Hof-rath of Kissingen, had kindly placed his carriage at my service the following morning, for a visit to Bocklet, a village with a chalybeate spa about five miles up the valley, and a pleasant drive from the town. I had lost my friend Dr. Beneke early in the morning; he was obliged to return with all speed to Bonn, where he held the office of secretary of one of the departments at the approaching meeting of savans in that place. I had wished him farewell the previous night, with some foreboding that at three o'clock in the morning I should be little inclined to give him a last greeting; and so it turned out; for, with the selfishness of sleep, I heard him called, and leave his chamber, which was only separated from mine by a sitting room, and, with one of those grunts of satisfaction that one hears in such perfection issuing from the midst of the straw in a piggery, I turned on the other side, and was soon travelling in a very different direction to that taken by my friend.

In the morning, at seven, I was a little ashamed of my sluggishness, and sought refuge from self-reproach in a matinal walk in the grove of the wells, where I had the additional satisfaction of seeing the visitors sip their beaker of Ragozi, of Pandur, and of Max; and I found that even in water there was an epieureanism, for several of the knowing ones were taking the chill off their morning cup at a little portable furnace, like an ironing stove, that was placed near the temple of Ragozi. The morning was cool, and a brisk walk was most acceptable, inspired by the enlivening music of an excellent band that had its station in a little pavilion in the midst of the grove. At the Max end of the grove were some little shops, one kept by a buxom bright-eyed Bohemian woman, who looked very handsome in her tight-fitting velvet jacket; while her husband, near her, was the picture of a bandit emperor, in his tall conical hat with drooping brim and feather, and elegant girdle, which only wanted the pistols and dagger to reach the sublime à l'opera.

Near by was a print shop; oh! the ecstasy of a print shop in a foreign place; and then there was a most enticing shop of Bohemian glass; and then a statue of Hygeia, the Hygeia of Kissingen. It is curious to see how differently the same idea is treated by different minds; and so I thought, as I looked up at the lady before me; she was evidently intent on revenging the

deception practised on our common mother, Eve; for whereas Eve accepted the apple from the serpent, Hygeia was using all her blandishments to induce her serpent to swallow a cup of physic, probably Ragozi; and the serpent, nothing loathe, was cooling his forked tongue in the sparkling element. At the feet of the lady sat two grave old fellows, river gods, or rather I suppose spring gods; though, judging by the length of their beards, they had long since cut their wisdom teeth; one of them, perhaps grandpapa Ragozi, was the owner of the eup out of which the serpent was drinking, and was looking up with a malicious eye to watch its effects; whilst the other, perhaps Pandur or Max, was filling a champagne glass out of his jug with great gravity, as though he had made up his mind that it was excellent stuff. I remember at Wiesbaden another statue of Hygeia, which was honoured with a tall pedestal, in the little square near the Koelbrunnen, and I thought it my duty to see that the Goddess of Health was treated with becoming respect. The Wiesbaden Hygeia is a matronly dame, seated on her throne, who draws a sick child gently towards her with one hand, while in the other she holds the healing eup around whose stem the serpent is coiled. The character of sickness is given to the child, not only by the thin cheeks and pinched expression of countenance, but also by the sheet that is closely drawn about her for warmth; while, on the opposite side, another child, restored to

health, is expressing her gratitude and enjoyment of existence by smiling face, and unclothed luxuriance and freedom of limbs.

Whether Dr. Diruf's horses washed down their morning oats with the waters of Ragozi or not, I am unable to say, but they were remarkably lively; and as a part of the road was a terrace without any rail on the side, and in another part was something worse, I admired the playful creatures a little timidly, and began to calculate whether it would be better to jump out or sit still, in case of disaster. I consoled myself, however, by thinking that the Doctor would not like to spoil my report of Kissingen, by spilling me into one of its brooks, and that the coachman and his horses were probably on terms of mutual understanding. The ups and downs of these mountain places are so numerous and sudden, that more than usual provision is required to render travelling safe; and even private carriages are furnished with a break, worked by means of a handle placed by the side of the coachman's box. Once or twice the coachman applied himself vigorously to this machine, and with an obvious improvement in our rate of sliding. My friend the coachman seemed to have an inkling that I was out on a tour of observation, and he seemed determined that no efforts of his should be wanting in helping me to fill my note book; first, it was a point of view to which he directed my attention; then the sea-water smell of the

saline works; then a deep spring that was apparently submitting to have its teeth drawn with powerful machinery. He made me dismount to look at this, and told me it was two thousand eight hundred feet deep, and that, when in operation, the water rose for many feet into the air. Then he expatiated on the grandeur of the saline works, of which he said there were five in Bavaria, and this was the largest and the best; but he could neither tell me how much salt was made in a year, nor where it was exported.

The distance of Bocklet from Kissingen is about five miles, and the valley along which the road lay was divided into three by two ridges of low hills that crossed from side to side. So that, in reality, the valley was divided beyond the first barrier into two basins, a square-shaped basin or enclosed plain, in which were the villages of Grossenbrach and Aschach; the latter having a tall building, once a chateau, but now a porcelain factory; and a long, low bridge, built across a meadow and portentous of winter floods. Indeed, this might be anticipated, from the fact that I have just mentioned of the middle basin being surrounded with hills, so that the little river has to flow nearly three parts around it before it finds an escape, up in one corner, into the lower valley. Besides Aschach and Grossenbrach, we passed through the village of Kleinbrach, and at last reached the upper basin, the basin of Bocklet.

BOCKLET lies rather to the right of a round shallow basin, at an elevation of six hundred and twenty feet above the sea, and completely surrounded with a hilly ridge, excepting on the side of the valley of Kissingen. The surrounding hill country is turned to account for the exercise of the visitors, and is laid out in pretty rambling walks, with here and there a seat or rustic pavilion, the usual arrangements of these places ; while in the neighbourhood of the village is a grove of trees, through which a large hotel and the roof of the bathing house are visible. I had brought with me a note of introduction to the physician of the spa, Dr. Kirchgessner, from Dr. Diruf, but was unhappily a few hours too late to see him ; just as I caught Dr. Beneke in full flight from Nauheim, for the season was over, so the season of Bocklet closed this very day, the 15th of September, and the ministering spirit of the place, the Doctor, was already gone. My next enquiry was for an old patient of my own, who had been sent here for the sake of the waters, and she too was gone ; and when I looked around me and perceived the gloomy appearance of the grove, with the autumn leaves rustling along the ground and crowding into the corners out of the way of the wind, I could no longer wonder that all should have been seized with the panic of desolation. But however lonely and comfortless Bocklet may appear at the end of the season, these very trees and tall poplars surrounding

them, must bestow a shade most agreeable during the summer months, while the neighbouring hill and woods must invite many an agreeable stroll. The basin of Bocklet is cultivated and more open than the valley of Schwalbach, and its proximity to Kissingen renders it an agreeable summer retreat.

But, although the Doctor was gone, the Host was not; and I was shown the springs and the baths and all the special arrangements of the place by Mr. Maulich, my landlord of the Curhaus at Kissingen, and the proprietor of the hotel here and of the springs. Bocklet has four springs, the Ludwigsquelle, Friedrichsquelle, and Karlsquelle, all of which are chalybeate springs; and a Schwefelquelle or sulphur spring, which, in addition to its chalybeate qualities, contains sulphuretted hydrogen gas. The water is clear, sparkling, and acidulous, with a slight flavour of iron, and the sources are sufficiently abundant to supply baths for two hundred persons. The springs are situated under cover of the bath house, occupying its centre, which is open on both sides; while, right and left of the central compartment, the building is devoted to baths, and contains twenty-eight cabinets. The building is old, bearing date 1787, and hardly in keeping with the elegant establishments of modern baths; but there is every appearance of comfort; and Mr. Maulich informed me that he was about to improve the place very considerably. At Bocklet, moreover, I made ac-

quaintance with that curious modification of the bath termed the Moorbäder, or peat-mud bath. The mud bath is prepared by adding a certain quantity of a soft black peat to the water, and mixing them well together, so as to form a soft gruelly fluid ; and in this singular mess the bather bestows himself ; in a word, it constitutes a kind of soft, warm poultice to a part or to the entire body, and no doubt must be very pleasant, and, in some cases, a very valuable remedy. The peat consists of vegetable matter, probably the leaves of trees, reduced by decomposition to a soft mass capable of diffusion through water, and, besides its physical properties, contains sulphur and iron. It is procured from a bog in the Rhoen mountains, not far distant, and called Schwarzenmoor. When the joints are pinched with the aches of rheumatism, the bones and nerves wearied with gnawing pains, and the pulse and skin fevered with parching heats, it is not difficult to understand that a mud bath of an agreeable temperature may be one of the greatest luxuries, for the time, that the world can bestow.

The waters of Bocklet possess the usual constituents of a saline chalybeate spring, with the addition of sulphates of soda and magnesia in small quantity ; and in one of the springs, as already mentioned, sulphuretted hydrogen. Their temperature ranges between 50° and 59° of Fahrenheit, and, besides the sulphates, there are muriates of soda and magnesia, and carbonates of lime,

magnesia, and iron, amounting, in the whole, to twenty-eight grains and a half of solid salts to the pint; and a considerable charge of carbonic acid gas, namely, thirty-nine cubic inches. The Schwefelbrunnen has only five grains of solid salts to the pint, with twenty-one cubic inches of carbonic acid and two tenths of a cubic inch of sulphuretted hydrogen gas. The proportion of carbonate of iron is also smaller than that of the chalybeate springs, being less than half a grain. The sulphates are apt to communicate an aperient effect to the waters; a very important and valuable feature, and one calculated to keep in check the ordinary astringent tendency of the iron. Bocklet is the resort of persons suffering under debility, with deficient quantity and quality of blood, and relaxed state of the mucous membranes; while the peat-mud baths offer their charms for the solace of old rheumatisms and gout. Besides the ordinary baths which are heated by steam to the temperature required, there are also douches suitable to local complaints.

The irregularity of the valley of the Frankische Saale renders it necessary, in the middle basin, to cross from one side to the other; thus, after climbing a little wooded pass, we enter the middle basin nearly at the middle of the barrier; then we cross the bridge, and, after following an avenue of poplars for somewhat less than a mile, cross the valley and stream towards the other side before we return again to the direction of Bocklet; then,

as soon as we mount a rising of the road which gives us the first view of Bocklet, with its pretty church, embosomed in trees and surrounded with luxuriant meadows, we pass over a bridge for the third time, and reach our destination, sometimes crossing the river, and sometimes rolling along by its side. This little variety of course adds very much to the beauty of the scene, and contributes to the charms of the ride. Moreover, on my return, I took the opposite side of the valley to that by which I had left Kissingen, and was thereby enabled to admire the country from all its points of view.

From the hills adjacent to Kissingen, some beautiful views are obtained, particularly from Aldenberg, from whose wooded sides we look down, not only upon Kissingen, but also upon a pretty village in a neighbouring valley, Garritz, and its charming scenery; while, to the north of the hill, runs the road to another beautiful valley, that of Brückenau.

BRUCKENAU is situated in one of the valleys of the Rhoen mountains, on a little mountain stream called the Sinn, a tributary of the Frankische Saale, and is about thirteen miles from Kissingen, the road lying through the small town of Hamelburg and along the Sinnthal, a valley abounding in picturesque scenery. The springs and baths of Brückenau are about three miles away from the town, at an elevation of nine hundred and fifteen feet above the sea, and consist of a beautiful and extensive

garden, with large and commodious hotels, a royal residence, and a magnificent Curhaus, built by the King of Bavaria; while, round about, the ground rises into a curtain of wooded hills, one of them being the Sinnberg, at the foot of which the springs take their origin; another, the Hartwald, and, at no great distance, the lofty peaks of Kreutzberg and Dreystelberg.

The climate of Brückenau is cool and temperate, the summer average not exceeding 63° of Fahrenheit, and that of the whole year, 49°. Its springs are three in number, the SINNBERGER, WERNARZER, and STAHLQUELLE, and the waters clear, brisk, and sparkling, containing a large quantity of carbonic acid gas, namely, from thirty to thirty-eight cubic inches to the pint, and a small proportion of bicarbonate of iron, with very little else. Thus the entire amount of saline constituents in a pint of the Wernarzer is less than a grain (0.89); in the Sinnberger, one grain (1.05); and in the Stahlquelle, a little more than three grains (3.3); their temperature ranging between 49° and 50° of Fahrenheit. The iron and manganese in the Sinnberger are a mere trace; in the Wernarzer, they amount to a little more than one hundredth of a grain; and in the Stahlquelle, to scarcely more than one tenth of a grain. The other constituents of the waters are bicarbonate of lime and magnesia, sulphate of potash, and silica: the Stahlquelle containing, besides, less than half a grain of the sulphate of magnesia.

The carbonic acid rises so abundantly in the wells as to give them the appearance of boiling; and it is worthy of remark, that, although all the springs arise close together and probably draw their source from the Sinnberg, there should be, as we have already seen at Cronthal and Homburg, a Süssquelle, or spring of sweet water, remarkable for its absence of any trace of saline matters, in their immediate neighbourhood, and within a few feet of them and of the little river.

The waters of Brückenau have obtained a reputation for their tonic and blood-making powers in cases of debility; and are also useful in diseases of the organic system, as of the liver and kidneys; combined with warm milk, they are beneficial in affections of the lungs; while they are employed with success in chronic bronchitis, dyspepsia, and the scrofulous diseases of children. The quantity taken is large, on account of the feebleness of the waters in saline constituents, reaching two or three pints daily. The baths have the credit of producing a stimulant action in the skin, and are commonly used at a temperature of 98° of Fahrenheit.

As a royal bath, Brückenau is a fashionable resort; and the King of Bavaria has omitted nothing, to render it in the highest degree attractive. It is also in favour with Scanzoni, who advised the Queen of Bavaria to pass some weeks there during the present summer.

I have before remarked on the exterior grandeur of

the chief hotels of Germany, and particularly at the spas. This was peculiarly the case at Kissingen; the main body of the sleeping rooms of the Curhaus are situated in a large building at the back of the apparent hotel, and it was here that was lodged the Empress of Russia for some weeks during the summer; and it was here, also, that Dr. Beneke and myself were housed for the night. Our apartments consisted of three rooms; a magnificent sitting room, with mirrors, sofas, and easy chairs, of beautiful green velvet, that made us feel sorry that we could not sit upon two or three at a time; and on either side, a large and commodious bed room, with every luxury of sleeping and washing accommodation; the rooms being lofty and light. It was in one of these bed rooms that I parted with my friend at night; and it was in the opposite one that I was to seek the balmy breath of Morpheus, or, as a sailor would more pithily say, "*turn in.*" It is easy to say "turn in;" but what are you to do, when you find yourself between two tempting beds, each more beautiful than the other? I longed to be a Siamese twin, that I might sleep in both at the same time; and it almost ended in my passing the night on the velvet sofa, in indecision which I should select, when the bright thought occurred to me that I would sleep half the night in one and half the night in the other, and decide which should go first by tossing a kreutzer. This trouble off my mind, I was

soon between the sheets, and soon asleep ; and found in the morning that I had missed my treat of the second bed. The Honourable Master Pippis cried, when he had eaten three Banbury cakes, because he could'nt get through a strawberry tart ; and, to have been consistent, I ought to have done the same at losing the enjoyment of my second bed ; but it was a judgment, as my reader will soon hear.

There is no part of a traveller's adventures more remarkable than that which is founded on the extraordinary idea which the foreign people among whom he finds himself seem to have of ablution. I only refer to this here, apropos of Kissingen, because the appointments were perfect ; there was an abundance of jugs, of basins, and of water ; and as the traveller does not move without his cake of soap, why there was every thing that heart or skin could require ; but this was the exception. In general, we may find every degree of comparison, from least up to little ; but never enough. I have a vivid remembrance of a charming apartment which I occupied at Schwalbach, when, as at Kissingen, I was the lucky possessor of two beds, separated by a pair of curtains from my sitting room, with its velvet sofa, soft chairs, and commodious writing table. There I used to write before the window, while a pretty little peasant girl brought me each day a tiny bunch of flowers, and a handsome country woman tempted me with grapes

and figs ; and there, where Nature and Art had done so much to make it a very happy resting place, my washing apparatus consisted of one white pudding basin, and one small glass bottle of water, one saucer for my soap and brushes, and one small tumbler for my teeth. Whether mine host had ever had the affliction of losing one of his guests by drowning in his washing basin, or in his water jug, I am unable to say ; but it seemed quite clear to me that he was determined to guard against any such possible accident occurring in his house, and took very effectual measures to make his purpose secure. Somebody is said to have remarked, once upon a time, in flowery French : “ *Comment est qu’on se lave les mains toujours, et jamais les pieds ?* ” I can only say that “ *les mains* ” might esteem themselves very lucky if they got more than one lick out of the small abundance of water that fell to my lot on this occasion. Another time, the water jug was a white pitcher, such as one receives his modicum of professedly hot water in for shaving, at seven o’clock in the morning, in mid-winter in London ; and the little piteher seemed to be quite proud in finding itself the tenant of a pie-dish to match. Now, a common-place Englishman, without any imagination or poetry in his soul, would have overlooked these little objects altogether, and have thought the careless chamber-maid had left the kitchen dish she had brought with her tea-leaves to sweep the room, and that the little pitcher was probably intended

for sprinkling the floor ; and would probably have been absurd enough to astonish the household by demanding a jug and basin ; but as I pretended to some knowledge of the habits of foreign parts, and looked up to myself as a philosopher, I calmly reflected upon the condition of a man in a country where there is no water at all ; for example, in the Moon, which is said, by those who know more about it than I do, to be a dry volcanic cinder ; and, following a train of very dry thought which opened out from the preliminary proposition, I came to the conclusion that I was a fortunate man to have any water whatever, and determined to serve it out as we do our physic, three table-spoonfuls morning and evening, and believe myself a perfect Sybarite.

CHAPTER XVI.

KISSINGEN TO HOF.

WHEN, at three o'clock in the afternoon of my twelfth day from home, I entered the court-yard of the Poste from whence the diligence was to proceed to Schweinfurt, I found myself surrounded by "troups of friends." There was a Ceylon Judge, with his Lady, whom I had expected to see at Bocklet; there was the Hofrath Dr. Diruf, to whose kindness I had been so much indebted during my exploration of Kissingen; and last, not least, there was my friend the Hungarian Physician, who had *done* Wurzburg as I had been doing Kissingen, and was now to be my travelling companion again; and, in addition to these, there was a fierce-looking man, with a Roman nose and Greek cap, who had known the Judge in Ceylon, and was therefore my sworn friend, until the middle of the night, when we were to part for ever. The two latter in fact, with a lady suffering under a bad headache, whom I attempted to

comfort, formed the whole of the passengers. Being the first at the Poste, I was entitled to the first place, namely, one in the coupé; but my friend the Doctor, taking advantage of our old friendship, contrived to poke me into the interior along with the patient, while he, with our new friend with the red cap and Roman nose, seized upon the coupé, as he said, to save me the annoyance of their smoke. I wish they had been as considerate when we were boxed up in the same railway carriage; for there I was thoroughly fumigated.

On comparing notes, I found that the first of our party to break company was the Doctor, who was to quit us at Bamberg, or, as he pronounced it, with infinite satisfaction to himself, Bambarrge, his route from Bamberg lying to the south; while my other friend and myself were travelling northward. The Doctor was to slip off at twenty minutes to nine; we left Schweinfurt at seven; and my last friend was to be swung at Lichtenfels, at half-past ten; and then I was to be left alone, if not in the world, at least in the railway carriage; and what was the world to me when I hadn't a friend left? My only resource was to go to sleep, and endeavour to waken up at half-past two in the morning, at Hof; a long way *off* it appeared to me at that moment. But as railway trains have the knack of getting along in one direction while time flies in another, the Doctor's time was nearly up, and the haven of his present hopes, Bam-

barge, not far distant. "May I have the pleasure of exchanging cards with you?" said he, turning to me with a melancholy face; his pipe had just gone out. "It will give me great happiness," replied I, feeling that it was not a case of duello, but only a tax on the card case. During this interval, the cards were exchanged, with the customary bows and smiles, and good wishes; and immediately after, Bamberg was announced; we were all to turn out, carriages were to be changed, supper was to be stowed away, some were to go one way, some another way, some to part, some to meet, some to sorrow, and some to joy. I thanked my stars, that dark night, that that scarlet Greek cap contained a figure-head that knew how to box the compass and steer through the dire confusion in which we were now thrown better than I did. "Follow me," said he; and I was not backward in taking his advice. We seemed to be crossing the rails, then getting into a maze of people, all going in different directions, and then we came upon a large room, shaped like a semicircular booth, surrounded with windows on its convex side; and through the windows, a strong light from within struggled in vain to pass, but was prevented by a dense coating of steam. Once in the room, and my eyes accustomed to the brilliant light, and my ears to the extraordinary noise of a hundred people all talking at once, and many laughing, and clearing the atmosphere the least bit in the world by a movement of my hand to

disperse the thick clouds of tobacco smoke that hung like a curtain of gauze in the air, I began by degrees to individualize the specialities of the apartment. First, I saw a long table which stretched in a semicircle around the convexity of the room ; and before and behind this table were drinkers and smokers, some travellers, some country people, many soldiers, some sober, and some not ; then, within the half-circle, were numerous tables, some round and some square, and about them hungry travellers, keeping up an active transit between their plates and their mouths ; then across the cord of the semicircle was a buffet covered with tempting viands, with fruits and wine, and Bavarian beer ; behind the buffet were the smiling faces of the feminine dispensers of these luxuries ; some holding forth a tempting cutlet ; others, a pack of small kreutzers ; others, a foaming mug ; and others, an oration ; while, between the buffet and the tables, there oscillated a small body of auxiliaries, good-natured busy-bodies, whose lives seemed spent in giving food to the hungry, and taking their kreutzers in exchange. I was not long in falling into the spirit of the scene, and playing my part in the general confusion and devastation. First, I secured a cutlet mit cartoffeln ; then some bread ; next, my half-bottle ; and then for a few moments the scene seemed gradually to fade away ; perhaps the drop-scene fell, while a new act was preparing. Some minutes glided away ; I can't say how many ; but as many as

were necessary to disintegrate sundry cutlets and rolls, with a dessert of peaches, when I was recalled to the realities of life by a little group, apparently a Belgian family, sitting at the table near me. A mother was nursing her child, between two and three years of age; the child was wearied and sleepy; but either would not or could not sleep; and the mother and her female friend exhausted themselves in vain to induce it to sleep, or at least be quiet; for every few minutes it broke out in an impatient roar. Ah! the patience of woman! and, greater still, the patience of a mother! How much we owe to both! The father of the child was out of the way, but every now and then came up to the group and frowned at the still bellowing child, while he seemed half angry with the patient mother, whose countenance was calm and peaceful, because she was unable to stay the plaint of impatient childhood.

Passing from this little picture of domestic life, this lesson of maternal patience, tolerance, and solieitude, shining forth with all its brightness even in a drinking booth, I found my friend with the scarlet cap: thanks, scarlet cap; for hadst thou been ought else than scarlet, how could I have discovered the fine countenance of my friend under it so easily, standing near me, surveying the scene with a smile upon his features, and an intelligent expression of countenance? He had been shortly before in communication with a military officer, and now,

after taking in the whole party, he observed, quietly, "I am at a loss to make out who those people are," throwing his eye towards the Belgian family; "the rest," continued he, "I understand." I felt a slight tremor come over me at these strange words, uttered as they were in a singularly significant tone; and, as I understood nothing at all, I began to wonder in my turn who my friend could be. While I was ruminating on this new turn to my reflections, a singular figure, tall, with a thin comical face, dressed in a blue and white uniform, a cocked hat, and long stick with a silver globe at the top, and chain twined round its stem, a kind of cross between a parish beadle and a bellman, drawn out to a height of six feet, or thereabouts, stepped suddenly into the room, then, ringing a small bell and bringing silver-stick down upon the ground before him with a sonorous bang, after giving it a flourish in the air, he uttered, in a remarkably clear alto voice, a curt but emphatic oration, in which I caught the syllables: "Er-langen—nürn-berg—plein-feld—gun-zen-hausn — nord-lingen — donau-werth — augs-burg—und—mün-chen— with many others that it was quite impossible to catch at all. This singular proclamation at first struck me as the initiative of some grotesque fun which was to follow immediately, and particularly as the pompous manner in which it was delivered was greeted with a general laugh; but the laugh was scarcely over, when nearly one-half of our company made a sudden

bolt to the door. I glanced at the scarlet cap. "Don't stir," was the quiet explanation; "this is the Augsburg train; our summons will come later." These few words enlightened me as to the whole matter, and left me in admiration of the foresight which provides for the traveller's information of the readiness of the train, and the necessity of taking their places; and also with the conviction of the necessity of such an arrangement at a point where a number of trains meet and separate for different destinations.

We left Bamberg at half-past nine o'clock, and my friend composed himself to slumber, a dangerous experiment, seeing that in another hour his last minute would arrive. It gave me, however, the opportunity of acting the part of a guardian angel for once; for if I didn't keep watch for the life of poor Jack, as the great Dibdin wrote and sung, I at least kept ward over the cyclids of his scarlet capship, and bade them open just in time to see their owner vanish in the outer darkness. Now is Othello's occupation gone, thought I; and to convince myself of the fact, I drew my coat more tightly around me, and gave myself a shrug; the kind of shrug and shake that speak, without words, "cold night, tired, sleepy." But I was not to sleep that night; for feeling something crackle in one of my pockets, I carefully drew it forth, and discovered the card of my late penultimate friend, the Doctor. Well, thought I, I am the gainer by

the change, at any rate; for mine was a slip of thin superfine card, hot pressed, with name and address in plain "black and white," a contrast of colour that most people declare they always like to see things in; but this, let's see, an enamelled card. Now, Doctor, let me read you a lesson; enamelled cards, I have been given to understand, are prepared with white lead, and the preparation is highly pernicious to the workpeople who are employed in its manufacture; now, if this be true, and, without proof to the contrary, I assume it to be so, I hold that man, and that—no, not woman, courtesy forbids—that man, then, a brute, who uses such cards; therefore, Doctor, I hope you will bear this my denunciation in mind the next time you issue the order for a fresh pack of cards. But to proceed; in the first place, we see in the middle of my friend's enamelled card, in gold letters, "Dr. Pierre Brassovanyi," a most magnificent name; next, around Dr. Pierre Brassovanyi, like a halo round the sun, is a very elegant scroll, tapering away to each end, and throwing a leafy pivot up and down, to bring it into relation with a pretty frame-like border, all gold, gold, gold. Well, here ingenuity might be supposed to have exhausted itself; but no, there is a back front as well as a face front to my friend's card; and here I claim priority of introduction into England, if ever that honour should become the subject of dispute. I don't ask for a patent, I give it to the world, and I

modestly receive the world's thanks ; so, on the back front of this superb card we find, firstly, a neat golden border, and then four elegant, or, as a young lady just from boarding school would say, sweetly pretty corners ; and in each of these corners a word ; four words, and such words, teeming with significancy : First, there is "visite ;" no doubt, how do you do ; pretty well I hope, as this leaves me, or, as I leave it, at present ; and to say all this and a great deal more perhaps, all we have to do is to turn down *that* corner : then comes corner number two, "Ex offio ;" ah ! short for ex-officio ; just dropped in to feel your pulse, ask after the pain in your stomach, or how that last bottle of champagne settled itself last night, &c. &c. ; sorry to find you out, because I lose my fee, &c. &c. ; and all this is said by "ex offio," when *that* corner is turned down : corner number three, "felicitation ;" how eloquent ; a new husband or wife, it may be ; or a boy or a girl, son and heir, perhaps ; or a government place, or a legacy ; delicious word : and then corner number four, last scene of all, "adieux." I will leave this in the hands of Mr. Woodin ; none, I am sure can do such justice to the word ; or I will echo it to my late travelling companion ; and whatever liberties I may have taken with his card, under the panoply of the liberty of the press, I may assure him of my entire respect and friendship for himself.

I was due at half-past two o'clock, but it was nearer

three when we arrived ; at five I expected that the mail would start for Carlsbad, so I had planned to devote the intervening time to refection ; but my plan was doomed to be frustrated. The season was over at Carlsbad (September 13th), the morning mail had ceased to run three days before, and there was none until ten at night ! So, having clearly ascertained this point, I put myself in the hands of a porter to be taken to a shake-down for the remainder of the night. After wandering amidst high walls for some distance, he stopped at the closed gate of a court-yard and knocked ; every body was asleep, of course. "Is this an hotel ?" said I. "Yes ; the Golden Stag," replied he. I didn't believe him, but let him knock again ; and didn't much care where they put me, provided I could escape from the cold raw morning air and dense damp fog that filled the atmosphere. I couldn't conceive any one to be stupid enough to be awake at that hour, or, if awake, to turn out into the cold wretchedness of that bleak morning. I was just going to suggest that we should try the night-bell of a neighbouring apothecary ; apothecaries are accustomed to be tumbled out into the cold night at any hour, and get very little thanks for it into the bargain ; when I heard a heavy foot on a staircase hard by, and then caught the glimmer of a light through the crevices of the door. "Good-night," said my conductor, and I was soon installed in a room. Two beds again, thought I, but no longer the

imperial softness of Kissingen ; and *such* a smell ! I tried not to smell it for some time ; but it became so detestable and overpowering, that I plunged my head under the bedclothes and tried to forget it. But it was of no use ; I was tired and sleepy ; but in such an atmosphere sleep was impossible ; then I opened the window and put my head out, preferring the cold damp mist of the raw morning to the atmosphere of the room ; and thought of contriving a means of sleeping, or trying to sleep, with my head out of the window. Then I got into bed again ; and such a bed ! I had met with the kind before ; pillow very high, in truth, a regular bed on a small scale ; so that when one dropped in, one fell suddenly into an angle of forty-five degrees, with one's feet in unpleasant propinquity with one's head, and then another bed upon one's stomach made it altogether a question of smothering. This, however, was soon set right ; the outside bed and the pillow bed sent flying after each other across the room, and the railway wrapper for a counterpane made all snug in that particular, if it were not for the smell, which held possession of the deepest caverns of my nostrils, like an explosive fire-damp. But my persecutions had not yet reached their climax, and I was to pay to-night for my luxurious enjoyment of the night before. Well, that was perhaps fair ; but I felt it hard to be precipitated, all in a moment, from the soft bed of luxury to the open sewer of wretchedness. Whether or

not the cold damp air which I had let into my room had found its way through the keyhole and other vacuities of the dividing door into that of my neighbour, I am unable to say; but he began to sneeze, then the sneeze was repeated. I once saw Wieland set Covent Garden in a convulsion of laughter by a sneeze; but my neighbour's sneeze was no laughing matter, and very soon became infinitely worse, degenerating into a boisterous, continuous cough, in which the elements seemed at war with each other, and the unfortunate proprietor was at the last gasp of existence. It was clear that my neighbour had a bad cold, a *very* bad cold; but I thought, for the sake of civility, that he might have kept a little more of it to himself; and I am ashamed to say that the occasional reflection that my damp air might have started him off, was only followed by the mental ejaculation, "serve him right, he has no business to have a cold when people want to sleep; why didn't he take a cough pill, there are plenty in my bag? every body should travel with a cough pill; give him one if he wants one."

I shall long remember Hof, that night of nights, and yet a short night too; for whether I did sleep or not, I cannot tell; and as I only took to my bed at three, and too gladly turned out of it at seven, it could not have been more than of four hours' length. Ah! the misery that can be squeezed into four hours! that abominable smell; that cold, raw, night air; that most inconvenient hen

and eliekens' bed, a parent bed and its young ones ; then the mathematical attitude in which you were expected to take your slumbers, "taking a sight" with your great toe all night ; and then that unhappy man, with his still unhappier sneeze and eough. Reader, if you should ever visit Hof, and stop the night, remember me. However, my next business was to get out of my prison as soon as I could, and so I betook myself to my morning ablution ; there was my old friend the pudding basin dwindled down to a dumpling basin, my small bottle of water a little more than a pint, and a thin towel as big as a pocket handkerchief. Alas ! for the reverses of life ! and yet, thought I, it is easy to cut a figure where there is plenty, the art is to make an appearance on humble means. On my humble means I shaved and washed, I couldn't get up a tub, but I trust that I put a clean face on the matter when I presented myself before mine host at a quarter to eight. I thought he looked at me with a little amazement, to find me so fresh after the pickle he had prepared for me ; but I wasn't weak enough to show him that I felt his unkindness. Perhaps he thought it kindness, and that to rid me of existence in a quiet way might save me a good deal of trouble hereafter ; and I began to think that, like the fabled cat, I was possessed of more lives than one, or I should have been dead before the morning. I have an instinct for diving into the rationale of things, and I must confess to

some curiosity in my endeavours to discover the cause of the abominable smell of last night. The secret was soon out; the wall against which I attempted to sleep was the wall of an apartment which had a pair of ciphers upon its door, thus, 00, sometimes emphatically, 000, and, in the parlance of hotel life, is called "numero null." Now, numero null is the one black spot in German hotel life, and one which I hope the proprietors will set themselves to wipe away; we can lend them Sir Benjamin Hall and the Thames, if they need any foreign assistance.

Mine host of the Golden Hirsch confirmed the report which I had already received at the railway station. No stage to Carlsbad, season over; however, there was a return carriage in the town going there, but must have two days for the journey, one to Franzensbad and one to Carlsbad. The proposal was very tempting, a two days' ride over the Fichtel and the Erz mountains, and with a companion and leisure, it is one I should have leapt with joy to accept; but I was due in London on the 24th, and had on my list Baden, Wildbad, Ariadne at Frankfurt, Kreuznach, the meeting of savans at Bonn, and Spa; and I had no companion, had outlived them all, had become the oldest inhabitant, and, as it appeared, the last traveller; no wonder mine host tried to stifle me in the night. While he was talking, I perceived that he

had a huge swelling in the front of the neck, the goitre or Derbyshire neck; and when, after my coffee, I went out for a stroll in the town, I found that goitre was common among the women, but less frequent amongst the men. The women, in this border land of Bavaria, on the frontier of Saxony and Bohemia, were a different race from those I had heretofore seen; they were tall, with certain pretensions to beauty, but still the hard-worked class that women appear to be throughout Germany.

Bradshaw was my betrayer for the second time; from Hof, says he, "there are *cilwagens* (diligences) twice a day to Franzensbrunn, Carlsbad, &c., giving ready access to all the celebrated Bohemian springs of Těplitz, Marienbad, &c.;" and he further holds out the prospect of a peep at Alexanderbad, on the neighbouring Fichtel mountains. In my stroll round the town, I stumbled on my neighbour of the bad cold. "Suffering from cold, sir?" says I. "Yes," said he, "had a very bad night." I didn't tell him the share I had in his bad night. We skirted a deep valley, in which were several factories, and, from our elevated position, gained a view of the surrounding hills, the Thuringian Wald to the east, the Erz mountains to the west, and the Fichtel range to the west and south; the latter being situated in Bavaria, and the Erz forming the northern frontier of Bohemia. The rock peeped out

of the ground in several places in the course of our walk, and the building material of a newly-erecting house showed it to be a bluish limestone, with veins of marble. It was with no small inward pleasure that I bade adieu to Hof, and gave a parting bow to mine host of the Golden Hirsch.

CHAPTER XVII.

AUSTRIAN SPAS. WURTEMBERGIAN SPAS.

AUSTRIA is rich in mountains, and rich in mineral springs ; of the former, are the Erz, and the Riesen or Giant mountains, on the north of Bohemia ; the Böhmerwald range on the south-west ; and the Iglau range on the south-east. Then, in the southern part of the empire, there are the Rhætian Alps in the Tyrol, with a continuation of the same range, the Norie Alps, in the south of the province of Austria and in the north of Styria. These mountains are composed of primary and transition rock, with secondary strata of limestone lower down ; then coal formations and tertiary strata of sandstone ; and, at the surface of the soil, alluvial deposits. The rocks yield an abundance of metals, gold, silver, copper, iron, manganese ; with soda, potash, alumina, sulphur ; and carbonate of lime, in the form of marble ; so that all the elements are present which are necessary to the constitution of mineral waters.

The chief mineral springs of Austria are, Carlsbad, Marienbad, Franzensbad, Teplitz, Bilin, Gieshübel, Sidschütz, and Püllna, in Bohemia ; Baaden, near Vienna ; and Ischl and Gastein, near to Salzburg, on the frontier of Styria and the Tyrol. Those of Carlsbad, Franzensbad, Teplitz, Bilin, Gieshübel, Sidschütz, and Püllna, arise in the Erz mountains ; of Marienbad, in the adjacent Böhmerwald ; of Gastein and Ischl, in the Noric Alps, the former near the frontier of Tyrol, the latter near that of Styria ; and of Baaden, in the continuation of the Noric Alps northward, not far from Vienna.

The most important of these springs are those of Carlsbad, Marienbad, and Franzensbad, which contain from forty-five to nearly eighty grains of solid salts to the pint ; Bilin contains thirty-five grains ; Baaden, only fourteen grains ; Teplitz and Gieshübel nearly eleven grains ; and Gastein, two grains. Sidschütz and Püllna are both much stronger than the preceding, containing, respectively, $178\frac{1}{2}$ and 248 grains in the pint ; while Ischl is a saturated muriated saline water, with 238 grains to the pint, and used only in the form of baths. The mineral springs of Austria, and particularly those of Bohemia, also introduce us to a new element of composition, namely, sulphates, sulphate of soda, or Glauber's salts, constituting the base of the *sulphated saline waters* ; the springs of Carlsbad, Marienbad, Franzensbad, and Gas-

tein are examples of sulphated saline waters. Baaden is a sulphated saline water, with the addition of a small quantity of sulphate of magnesia, or Epsom salts. While Püllna and Saiduhschütz both contain a large quantity of sulphate of magnesia; namely, Püllna 93 grains, with 124 of sulphate of soda to the pint; and Saiduhschütz 84 grains, with 47 of sulphate of soda. These two latter waters are therefore *sulphated saline magnesian waters*. The springs of Teplitz, Gieshübel, and Bilin are *carbonated alkaline waters*. Then, in addition to these distinguishing characters of the waters, five out of the spas are endowed with *thermal springs*, namely, Carlsbad, Teplitz, Baaden, Gastein, and Ischl; the range of temperature being 80 to 165 degrees, the latter representing the greatest heat of the sprudel of Carlsbad.

CARLSBAD is situated in the north-western angle of Bohemia, not very far from the point where the Erz, the Fichtel, and the Böhmerwald mountains irradiate, each starting away at right angles from the other. In this same angle also, and at no very great distance, are found Franzensbad and Marienbad. The town of Carlsbad is built on the banks of the Tepl, close to its junction with the Eger, the latter being one of the tributaries of the Elbe. The Tepl occupies one of the narrow valleys of the Erz mountains, and the country around is remarkable for beauty of scenery. The level of the town is 1150 feet above the sea; and the climate cold and uncertain,

from its exposure to the north. Its principal springs are seven in number, namely, the SPRUDEL, the MARKTBRUNNEN, the MUHLBRUNNEN, the THERESIENBRUNNEN, the SCHLOSSBRUNNEN, the STEPHANSBRUNNEN, and the springs at the RUSSISCHE KRONE. The most important of these is the Sprudel, which leaps up from its bed about twenty times in the minute, forming a column of water of considerable thickness. The springs all proceed from the same origin, but differ in temperature and quantity of contents, in relation to their proximity to the parent source; the temperature of the Sprudel is 165° , while that of the others is successively reduced to 72° ; and the quantity of solid contents varies between twenty-eight and forty-six grains. Their chief constituent is sulphate of soda, then follow carbonate and muriate of soda; next in order, come sulphate of potash, the carbonates of lime, magnesia, and iron; then silica; and, in very small quantity, iodine, bromine, strontia, manganese, alumina, phosphate and fluuate of lime, and lithia; the charge of carbonic acid gas varying between twenty-eight and forty-six cubic inches to the pint. The waters of Carlsbad deposit their earthy salts so abundantly, as to render it somewhat difficult to keep the pipes and apertures of exit clear; occasionally they have become so much narrowed as to create considerable inconvenience; and, in one instance, their closure was attended with a convulsion of the earth

and forcible discharge of the water. From this peculiarity, they have formed a rocky bed for themselves, out of which they issue. Besides the drinking springs, the waters of Carlsbad are used as baths; and it has, in addition, vapour baths, and peat-mud baths.

MARIENBAD lies to the south-west of Carlsbad, at the distance of about twenty-four miles, in a valley of one of the Böhmerwald mountains, called the Königswarter. It has six springs, namely, the KREUTZBRUNNEN, FERDINANDSBRUNNEN, MARIENBRUNNEN, CAROLINENBRUNNEN, AMBROSIOUSBRUNNEN, and STAHLBRUNNEN. The waters are cold, their temperature varying between 45° and 53° , and they contain the same chemical constituents as those of Carlsbad, with a larger proportion of iron. The quantity of solid contents in the Kreutzbrunnen is sixty-six grains to the pint, seventy-three and a half grains in the same quantity of Ferdinandsbrunnen, and fourteen in the Carolinenbrunnen; the amount of carbonic acid gas varies between eight and fifteen cubic inches. At Marienbad there are numerous carbonic acid gas baths, as at Cronthal, Homburg, and Kissingen; and peat-mud baths; while the elevation of the springs above the sea is much greater than at Carlsbad, namely, nineteen hundred and thirty-two feet. The peat is brought from two moors, at no great distance from the town, and is chemically composed of a combination of carboniferous, sulphureous, and chalybeate mud.

At FRANZENSBAD, in the neighbourhood of Eger, the waters are also *cold sulphated saline chalybeate*, resembling very nearly those of Marienbad, and particularly the Kreutzbrunnen, but with a larger proportion of iron; while they contain somewhat less of sulphate of soda. The country around is flat and richly cultivated, and the town of Eger, which is joined to it by a long avenue of trees, particularly interesting. Its elevation above the sea is 1350 feet, which renders it cool, and the chilliness is increased by the absence of protecting hills. The waters are highly charged with carbonic acid gas, containing from 27 to 41 cubic inches to the pint. It has also baths of carbonic acid gas, and peat-mud baths; the latter containing a large quantity of sulphuric acid and iron.

The principal springs of Franzensbad are the FRANZQUELLE, LUISENQUELLE, WIESENQUELLE, and SALZQUELLE. The amount of solid salts in the pint varies between thirty-six and forty-five grains, more than half of that quantity being sulphate of soda.

TEPLITZ, also situated in a valley of the Erz mountains, not far from Dresden, has thermal waters, varying in temperature between 79° and 120°, and possessing but a small proportion of saline matters, namely, eleven grains to the pint; the chief chemical constituents being carbonates of soda, lime, magnesia, and iron; with a small quantity of muriate of soda, and gaseous elements, chiefly nitrogen, with carbonic acid gas. In these par-

ticulars, Teplitz may be ranked with Schlangenbad and Wildbad, as having waters almost negative in their medical properties, and chiefly serviceable as affording baths of an agreeable temperature. At Teplitz, moreover, mud baths are employed, made like those of Marienbad, by the admixture of a soft pultaceous peat, procured from the neighbouring moors, with the mineral water.

Teplitz adjoins the village of Schönau, and has an elevation of only 648 feet above the sea; its climate is consequently mild and genial, while the country around is pleasing and agreeable. Its principal springs are the HAUPTQUELLE, with a temperature of 120° ; SANDBADQUELLE, 111° ; STADTISCHE FRAUENBADQUELLE, $117\frac{1}{2}^{\circ}$; FÜRSTLICHE FRAUENBADQUELLE, $115\frac{1}{2}^{\circ}$; and several GARTENQUELLEN; one of which, called the TRINKQUELLE, has nearly 80 degrees of heat. The springs in Schönau are the STEINBADQUELLE, 100° ; TEMPELBADQUELLE, 90° to 99° ; WIESENBADQUELLE, $88\frac{1}{2}^{\circ}$; MILITAIRBADQUELLE, $92\frac{1}{2}^{\circ}$ to 95° ; NEUBADQUELLE, $110\frac{1}{2}^{\circ}$; and SCHLANGENBADQUELLE, 104° .

BILIN is not far distant from Teplitz, between four and five miles, and a little removed from the Erz mountains. It possesses three springs, of which the principal, and indeed the only one in use, is the JOSEPHSQUELLE. The waters are *carbonated alkaline*, with a few grains of sulphate of soda and muriate of soda. The entire

quantity of solid salts in a pint is about thirty-five grains ; and the temperature of the water, $52\frac{1}{2}^{\circ}$. It has gained a reputation in chronic bronchitis.

GIESHUBEL is another spa of the same class as Bilin, and also not very far distant from Teplitz, being situated in the Erz mountains. Its waters are *carbonated alkaline*, with a temperature of 49° , and contain not more than eleven grains of solid salts, of which seven are carbonate of soda.

SAIDSCHUTZ is somewhat further out in the plain than Bilin, and between four and five miles from the latter place. It possesses about twenty springs, and its waters have a temperature of 60° of Fahrenheit. The waters are *sulphated magnesian saline* ; the HAUPTQUELLE, or chief spring, containing nearly 179 grains of salts to the pint, and very little carbonic acid. Of these salts, 84 grains are sulphate of magnesia, which give the waters the bitter flavour that has gained for them the name of *bitterwasser* ; nearly 47 of sulphate of soda, and 21 of nitrate of magnesia.

PULLNA is near Brix, and not far distant from Said-schütz ; it is situated in the midst of the Erz range ; and possesses seven springs. The chemical composition of the *Bitterwasser* of Püllna is, sulphate of soda, 124 grains ; sulphate of magnesia, 93 grains ; with sulphate of potash and lime ; muriate of magnesia ; carbonate of magnesia and lime ; phosphate of lime and silica ; in all, somewhat

more than 248 grains to the pint. The quantity of carbonic acid gas is extremely small.

BAADEN, near Vienna, in a pleasing country at the foot of the Wienerwald, a continuation of the Noric chain of mountains, and situated at an elevation of nearly seven hundred feet above the sea, has thirteen springs, which resemble the waters of Carlsbad and Marienbad; but contain about one quarter of their amount of salts, namely fourteen grains to the pint, the sulphate of lime being in excess over the sulphate of soda. They have only one cubic inch and a half of gas, consisting of carbonic acid and nitrogen, with a very small proportion of sulphuretted hydrogen. The temperature of the water ranges between 80° and 95° of Fahrenheit.

The two principal springs are the URSPRUNGSQUELLE, or Römersquelle, and the LEOPOLDSQUELLE; and the hot steams of the waters are employed as vapour baths, the permanent temperature of the room of the Ursprung being 90° or 91°.

GASTEIN, or Bad Gastein, lies at an elevation of more than three thousand feet above the level of the sea, in a valley of the northern declivity of the Noric Alps at the highest part of the range, and close to the frontier of Styria and the Tyrol. The valley is named the Ache; it possesses a magnificent waterfall of 270 feet, and is surrounded on all sides by lofty mountain peaks, many of them capped with snow. The climate is Alpine, but the

valley is protected from the winds and weather by the mountain screen, and is not uncongenial to persons suffering under nervous complaints, and decrepid with gout. Its springs are seven in number, the FURSTENQUELLE; the DOCTORSQUELLE; the KAISER FRANZENSQUELLE, or Straubingerquelle; the HAUPTQUELLE; the CHYRURGENQUELLE; the WASSERFALLQUELLE; and the NEUQUELLE; their temperature ranges between 95 and 120 degrees of Fahrenheit; and in chemical properties, the waters are *sulphated saline*, with a small quantity of muriate and carbonate of soda, carbonates of lime, iron, and manganese, silica, and an organic substance termed glairine. The entire of the solid contents in a pint of the water amount to little more than two grains, in addition to nitrogen and a small quantity of carbonic acid gas. The springs of Gastein belong to the group of *negative thermal waters*, owing any medicinal powers they may possess rather to their temperature than to their chemical composition. They have obtained a reputation, like the waters of Schlangenbad, Wildbad, Pfäfers, and Leuck, for chronic gout, neuralgia, and nervous debility.

ISCHL is situated in a picturesque valley of the Noric Alps, the Salzkammergut, near the frontier of Styria. It is nearly 1500 feet above the level of the sea, and surrounded on all sides by high mountains. Its air is mild and humid, and impregnated with saline elements;

and it possesses a whey establishment, in which the whey is prepared in large quantity from the milk of the cow, goat, and ewe ; indeed, in quantity so considerable, that it is sometimes employed as baths. The baths of Ischl are saline vapour, and saline water baths. The mother-lye used for the purpose is brought from Salzberg, and contains 223 grains of muriate of soda in the pint, with muriates of magnesia and lime ; also, sulphates of soda, magnesia, and lime. The baths are made by the addition of from four to thirty-two pints of this lye to 128 pints, the common measure of the bath, which is then heated to a temperature of 86 to 97 degrees of Fahrenheit. The vapour employed in the steam baths contains free muriatic acid, muriate of ammonia, and bromine. The baths and whey of Ischl are found serviceable in affections of the chest and of the female organic system.

The train from Hof started at half-past nine, and, nothing loath, I took my seat at the appointed time ; the line runs through the western half of Bavaria, nearly from end to end, displaying a country rich in cultivation and beautiful in scenery. We first crossed a spur of the Fichtel mountains, in a south-westerly direction to Bamberg, and then turned to the south, along a charming plain, having the undulating line of the Frank Hohe hills on the west, and the blue curtain of the Böhmerwald in the far distance. The husbandman, with his faithful companion and slave, was busy in the fields. The

woman had exchanged the white kerchief, which I noted at Homburg, for one of a bright red, worn in the same negligent but not ungraceful style. While at the stations where the train stopped, we were feasted one while with deliciously cold sparkling water in tall glasses, then with fruit and sandwiches, all brought to the carriage doors, while in the buffet was an abundance of freshly cooked cutlets, roast partridges, basins of potage, tarts, beer, and wine. Here and there some fine pine forests made a change in the scene, with abbeys or castles surmounting beautiful hills.

Soon after quitting Bamberg, where this time we kept our train, we drew up at Erlangen, one of the German universities, more celebrated for the irregular distribution of medical diplomas than anything otherwise excellent in itself. It is a small, clean-looking town, with two handsome church spires, and pretty country around it ; while in the fields in its neighbourhood, and increasingly abundant as we proceeded, were extensive crops of tobacco. The women were busy plucking the largest leaves of the plant, and threading them on a string, afterward to be hung up against their cottages and garden walls to dry. Some of the cottages were completely covered with the narcotic weed, and against every one there was a larger or smaller collection of leaves ; it was the tobacco harvest, and, to all appearance, we were now passing through its midst. Beyond Erlangen, we came to Nuremberg, a

handsome-looking old town, with a large ultramarine factory blazing and smoking away ; and, a little further on our road, found the red sandstone again the prevailing building material. My eyes were pretty well accustomed in the course of my journey to see woman officiating in every position of labour of the ruder kind ; I cannot say that I saw any attempt to elevate her to a higher position, except in one instance, and then the means of her elevation was a bricklayer's scaffold, on which she was performing the duties of a plasterer. My fellow travellers were now on the alert for the approach to Donauwerth, where two of the party, ladies, and I may add myself to the number, were to see the Danube for the first time ; and the Danube is worth seeing ; for even here, so far away from its subsequent grandeur, it is a fine stream. We had just taken leave of the Maine, and now we were moving with the speed of science through countries which are watered by the great European tributary of the Black Sea. It was after eight in the evening, and already dark, when I descended from the omnibus at the ancient hostelry of Augsburg, called die drei Mohre.

Augsburg is a good specimen of an old German town ; it has a broad street, paved, both on the sides and in the middle, with round stones ; tall, white-looking houses, some with high gables turned towards the street, and others in the opposite direction with three or four tiers of windows in the roof. The drei Mohre, also pre-

sents many specimens of ancient wood-carving, some on the exterior, and others within. I had not much time on my hands, however, to examine the town, but was soon moving in the direction of Ulm, Stuttgart, and Bruchsal. Ulm is one of the fortresses of Germany, and possesses some extensive fortifications and an old cathedral, with several leather factories built upon the stream of the Danube, which runs through the place. Here, also, as the frontier town of Würtemberg, the comfortable railway carriages of the Bavarian lines are exchanged for the less commodious ones of his Majesty of Würtemberg.

The route from Ulm to Stuttgart and Bruchsal makes a clean section of Würtemberg, cutting it through its middle from east to west. Soon after leaving Ulm, the country becomes hilly, and the road is surrounded by the lower hills of the Suabian alps; it then cuts through the Suabian range of mountains, and is bordered on either side by picturesque hills, many of them surmounted by the ruins of ancient castles. This charming scenery accompanies the route nearly to Stuttgart, where the leafy hills of the Black Forest appear on the south, and form a beautiful outline to the country in that direction. Just before reaching Plochingen, and at fifteen miles distant from Stuttgart, we enter the Neckar valley, at the point where the Neckar receives the stream of the Fils, and follow its course to Canstatt and Stuttgart. Quitting Stuttgart, we diverge from the Neckar,

and, after crossing the Enz at Bietigheim, and leaving Heilbronn to the north, burst through the Black Forest to the west, and passing the frontier of Würtemberg, enter the Duchy of Baden, and arrive at our destination at Bruehsal.

In our way through Würtemberg, we pass near all its most famous spas ; Boll, and Canstatt, and Berg, lying along our route, and receiving their springs from the Suabian alps ; Reutlingen, Sebastiansweiler, Heehingen, and Imnau, also arising in the Suabian Alps, more to the south, in the district of Hohenzollern ; and Teinaeh, Liebenzell, and Wildbad, drawing their sources from the Black Forest. Canstatt, Berg, and Liebenzell, belong to the group of *muriated saline waters*, and contain, respectively, taking their maximum quantity, nearly 40, $33\frac{1}{2}$, and nearly 8 grains of solid salts to the pint ; combining sulphate of soda in small quantity with the muriate. The spa of Boll is a *sulphated saline and alkaline water* ; but very feeble ; containing little more than six grains of solid matter to the pint ; and some sulphuretted hydrogen gas. Reutlingen is a simple *sulphureous water*, with less than four grains of solid salts to the pint ; but a considerable quantity of sulphuretted hydrogen ; and the springs of Sebastiansweiler and Heehingen are *sulphated sulphureous*. The waters of Teinaeh are *carbonated alkaline and chalybeate* ; the weaker springs containing barely more than seven grains of solid salts, with only

one hundredth of a grain of carbonate of iron, and two of carbonate of soda; and those of Imnau are *acidulous chalybeate*, the solid salts in a pint amounting to from six to eleven grains and a half, and the quantity of carbonic acid gas being very considerable. Wildbad is ranked among the *negative waters*; containing only three grains and a half of solid salts to the pint, and, together with Liebenzell, is a *thermal spring*.

BOLL is one of the most ancient of the Würtemberg spas; and has had its virtues recorded in a small quarto work in Latin, printed in Italian type, and bearing date 1612, by Johannes Bauhinus. The book is called "*Historia admirabilis fontis Bollensis*;" and is profusely illustrated with engravings of the spa and the country around; together with wood-cuts of the fossils, masses of pyrites and fruits found in the neighbourhood. One regrets to see so much fine Latin expended on so small a subject; a mineral water containing three grains of sulphate of soda in the pint, and one grain of the carbonate, or a total of six grains of solid salts, and a very moderate proportion of sulphuretted hydrogen. Boll is situated in a hollow of the Suabian Alps, 1288 feet above the sea, and four miles from Göppingen. It is well protected from the winds by the surrounding heights, and its springs are at the distance of half a mile from the village. The waters are commonly drunk with goat's milk, and have obtained a reputation in affections of the chest, which the mildness

of the climate is also said to favour. They have also been mentioned as applicable to diseases of the skin; but upon this matter I am not quite so clear. In Bauhin's picture of the baths, we have a handsome and extensive bath house, with gardens, avenues, terraces, fountains, and appliances for stag-hunting, shooting, bowling, leaping, riding, and dancing; the latter being under the direction of a magnificent band. The waters of Boll are *sulphureous sulphated saline* and *alkaline*; and, besides sulphuretted hydrogen, contain carbonic acid and nitrogen.

CANSTATT is a spa of some celebrity, situated at the distance of two miles from Stuttgart; its elevation above the sea is 680 feet; it is surrounded by beautiful and picturesque hills, which protect it from all the winds but that of the south; and it enjoys a reputation for the relief of affections of the chest, and rheumatism; its climate being remarkable for softness and mildness. It has a handsome Curhaus, with gardens and promenades, and the adjacent country affords many pretty excursions to the hills, and also through the Royal Park to Stuttgart. Canstatt is placed in the valley of the Neckar, and its springs, which are numerous, arise on the banks of the river and from an island in the midst of the stream; the principal sources are the SULZERRAINQUELLE, or Wilhelmsbrunnen; two FRÖSNERSCHENQUELLEN; the ZOLLERSCHE, or Carlsquelle; the WIESENQUELLE, and

the OBERE SULZQUELLE ; while on the island are found the INSELQUELLE and SPRUDEL. The waters are *muriated saline* with *sulphates* of soda, lime, magnesia, and potash, carbonate of iron, and carbonic acid gas. The quantity of muriate of soda in a pint varies between 16 and $19\frac{1}{2}$ grains ; the sulphate of soda between two grains and five grains and a half ; sulphate of magnesia, between two grains and three and a half ; the carbonate of iron, between one tenth and two and a half tenths ; and the carbonic acid, between 16 and nearly 28 cubic inches. The total quantity of solid matters in a pint ranges between 37 and nearly 40 grains. The waters are compared, with some reason, to those of the Ragozi ; but are much milder.

BERG is a spa only half a mile distant from Canstatt, its springs rising on the same island of the Neckar that gives origin to the Inselquelle and Sprudel of the latter. Its sources are two in number ; one being considerably weaker than the other. The waters are *muriated saline* with *sulphates* of magnesia and soda, carbonate of iron, and only a small quantity of carbonic acid. They are greatly inferior in muriate of soda to the Canstatt waters, but somewhat stronger in sulphate of magnesia ; and the entire amount of their solid elements, of which nearly one fifth is carbonate of lime, is 24 grains and $33\frac{3}{4}$ grains.

REUTLINGEN, Hechingen, and Sebastiansweiler, are

a group of *sulphureous spas*, situated on the north-western declivity of the Suabian Alps, between Boll and the frontier of Baden, and at an elevation respectively of 1170, 1558, and 1469 feet above the sea. Reutlingen has two springs, a weaker and a stronger in sulphuretted hydrogen; the former being used for drinking, the latter for baths. The entire amount of solid salts in a pint is four grains, of which the carbonates are nearly half; with two hundredths of a grain of carbonate of iron. Besides sulphuretted hydrogen, these waters contain carbonic acid, nitrogen, and carburetted hydrogen. They are commonly drunk with cow's or goat's whey.

HECHINGEN, also on the Suabian Alps, with an elevation of 1558 feet above the sea, has two *sulphated sulphureous springs*, which lie at the distance of about a mile from the town; and the waters are brought into the town to the Curhaus and bath house, both for drinking and baths. The springs are named FRIEDRICHS-QUELLE and CONSTANTINQUELLE; they have a temperature of 50° to 52° of Fahrenheit, and they contain, besides sulphuretted hydrogen, about ten grains of solid salts to the pint, of which nearly one half are sulphates of soda and magnesia, with four grains of carbonate of lime and magnesia.

SEBASTIANSWEILER is about a mile distant from Hechingen, and not many miles from Tübingen. Its waters are *sulphated sulphureous*, and nearly identical in che-

mical composition with those of Hechingen. Sebastiansweiler has two springs, of which one only is in use, and a large and commodious bath house. The amount of sulphuretted hydrogen gas is somewhat more than $4\frac{1}{4}$ per cent.; and the waters contain, besides, a small quantity of iron and manganese, with a trace of iodine. The latter is also found in the waters of Hechingen.

IMNAU has an elevation of 1241 feet above the sea, and is between seven and eight miles distant from Hechingen. Its waters are *acidulous chalybeate*, containing a large quantity of carbonic acid gas, and a considerable dose of carbonate of iron. Its springs are six in number: the FURSTENQUELLE, or upper spring; and five UNTERENQUELLEN, or lower springs. The amount of solid salts in a pint ranges from six to eleven and a half grains, the latter being the quantity in the Fürstenquelle. The latter contains half a grain of the carbonate of iron; while two of the lower springs possess each six tenths of a grain; two, eight hundredths of a grain; and one, No. 5, none at all. The other chief constituents of the waters are, carbonate of lime, four to seven grains; carbonate of magnesia, muriate of soda, muriate and sulphate of magnesia, and sulphate of lime. The quantity of sulphate of lime varies between one tenth and a half, and five tenths and a half; the larger proportion being found in Nos. 2, 3, and 4. No. 5 is the most highly charged with carbonic acid gas, and contains

the least quantity of solid salts, the smallest proportion of sulphate of lime, and no iron. When these waters are not easily borne by the stomach, they are diluted with goat's milk or whey ; for the supply of which, there is an establishment in the neighbourhood.

LIEBENZELL is situated in the Black Forest, not far from Wildbad, at an elevation of nearly a thousand feet above the sea ; it is surrounded by a screen of mountain forests ; and its springs arise near the little mountain stream, the Nagold, which falls into the Enz at Pforzheim. Like the waters of the neighbouring spa, Wildbad, its springs are thermal, possessing a temperature of 71 to 77 degrees of Fahrenheit ; and it has an upper and a lower bath ; the latter being the warmest. The waters are *thermal muriated saline*, the quantity of muriate of soda in a pint being upwards of five grains, while the entire quantity of solid salts is less than eight grains. The constituents next in quantity to the muriate of soda, are the carbonates of lime, soda, and iron ; and there is a fair quantity of carbonic acid, with nitrogen.

TEINACH is also situated in the Black Forest, at a distance of some miles from Wildbad and Liebenzell ; its elevation above the sea is little short of that of the latter spa ; and the scenery around it is wild and picturesque, with a screen of the tall sombre pines of this region. Its springs are five in number ; four being protected by a pavilion, and solely employed for drinking ;

the other, the DINTENQUELLE, or Ink spring, being very rarely used. The waters of the four springs of the DACHLEINKASTEN are *carbonated alkaline chalybeate*, with a considerable proportion of carbonate of lime; only a small quantity, one hundredth of a grain, of carbonate of iron; and $20\frac{1}{2}$ cubic inches of carbonic acid gas in a pint. The entire solid contents in a pint are seven grains and a quarter, of which three and a half are carbonate of lime, and little more than two carbonate of soda.

WILDBAD, the remaining Würtemberg spa, is one of so much interest that I have devoted a chapter to it, at a later period of my journey.

The picturesque hills, and romantic ruins on their summits, of the Suabian Alps, enlivened and gave an interest to our journey from Göppingen to Stuttgart; and as we approached the latter town, the peasant women from the villages among the hills, and, further on, from the Black Forest, made their appearance at the stations, bringing with them pretty carvings in ivory and bone. It was at one of these stations that I made acquaintance with a handsome specimen of the old turnspit dog; his coat a bluish grey, his body remarkably long, a large head with standing-up ears, and legs banded to the highest point of excellence. The creature was a perfect mole in his figure; his shoulders and fore legs strong, and haunches and hind legs small—so small, in fact, as to appear too weak to support him; indeed, I may go

further, and repeat, with Hamlet, "Seems, madam! they are;" for the funny little fellow took every opportunity of popping his hinder quarters on the ground, a habit which was common to him, with several others that I saw in the course of my journey.

In my route of to-day, I became a little more familiar with Ulm than I intended or liked; having, from ignorance of the change of lines, missed the train, and having, in consequence, five tedious hours thrown upon my hands. I notice this now, only to call attention to a peculiarity in railway travelling on the Continent that deserves remark. My *sac de nuit*, being the sum total of my baggage, had been booked to Bruchsal, and was now on its journey thither, while I, its master, was doomed to sit discontentedly on a stile, doing nothing but kick my heels against the post, and chew the cud of my own inattention and stupidity. But I had no anxiety about my baggage, which, at home, would have been given up to the first ragamuffin who chose to claim it; or, perhaps, would have been pressed upon some one's attention, and might be carried off by an unscrupulously benevolent individual out of mere compassion; but here, in the good, stupid city of Ulm, I was harassed by no fears for my possessions; I had the receipt in my pocket, and only on the delivery of that would it be given up. Therefore, when at a late hour in the evening I arrived at Bruchsal, with the intention of going on by the first

train to Carlsruhe, which was as far as I could proceed that night, I met with no delay, but had merely to step into the luggage office, to put down my receipt, and take up my property. And in a few minutes after, with another ticket, and in another carriage, I was making the best of my way to Carlsruhe. “Hotel Gross,” said I to the charioteer into whose vehicle I cast my belongings; but as every body seemed bent on besieging Mr. Gross, I was turned over as a British subject to the Hotel d’Angleterre.

CHAPTER XVIII.

BADEN BADEN.

CARLSRUHE looked as pretty and clean, and as formal, as ever ; the countrywomen were collecting in the square at the foot of the red pyramid, as I opened my window to breathe the fresh air in the morning, and a troop of eavalry with their martial tramp were entering the long street, on their way to the suburbs for their morning exercise. I strolled towards the Chateau, and then to the Castle Garden, and then to the forest behind. All looked fresh and beautiful ; the leaves spangled, in the sun's young beams, with the morning dew. All was, apparently, as I left it more than twenty years ago ; all, except the railway and the railway station, which gave a new and more vigorous life to the suburbs in which they are placed. ❀

Two minutes short of the hour, carries us from Carlsruhe, along the pretty plain of Baden, rich in eultivation, to the eelebrated *bain de luxe*, Baden Baden. The entrance

to the valley in which Baden is situated is picturesque and beautiful, the town being completely shut in from view by the bends of the road, until we come suddenly upon it; and then it appears set in a frame of wooded hills, rising at each side into hills of more majestic dimensions, upon one of which, overlooking the town, frown the ruins of the old castle, while the surrounding ridge is fringed with the dark foliage of the Black Forest. Baden is built on the declivities of the hills which bound a narrow valley of the Black Forest, near its outlet on the plain; the small mountain stream running through its middle being the Oosbach. The old town lies to the north of the rivulet, rising roof over roof until it reaches half way up the hill, is surmounted with the new castle, and extends for nearly a mile along the valley. The south side of the valley and the declivity of its hills are occupied by the Curhaus and the assembly rooms, with their promenades, and groves, and gardens, and, beyond these, by some pretty villas and grounds. The little stream, the Oos, therefore draws a line between the occupation and the leisure of Baden, its business and its idleness.

In the summer time, when visitors are most numerous, the Oos is a very shabby little stream, scarcely covering the pebbles over which it runs, neither bright nor well kept, and abundantly infested with rats; suggesting the idea that it would be better covered over, or narrowed

in his walled limits; but in the spring, the autumn, and the winter, I doubt not that it is able to tell a different tale, and is then as boisterous a little stream as any of its cousins of the surrounding mountains. I must therefore waive the notion of covering in the Oosbach; but as I like to play the part of a public benefactor when I can, I would earnestly suggest that it might be dammed below the town, with great advantage to the inhabitants, both in a picturesque and a hygienic point of view. I am sure the visitor to Baden will concur with me when he looks upon those magnificent hotels, those beautiful villas, and that beautiful palace, approaching, by their grounds, the very edge of this dirty rivulet. The houses of the town come close up to the stream on the one side, while, on the other, are a pathway and a road, both planted with trees.

The springs of Baden are situated on the declivity of the hill, in the upper part of the old town. The *UR-SPRUNG*, or chief spring, is contained in an apartment of a bathing establishment of commodious extent, near the old church. This building is devoted to vapour baths; the water being conveyed to the different hotels by means of pipes for the warm baths. The spring issues from a fissure in the rock, and is received into a tank closed on all sides, and reached through a door, which is opened by an attendant when visitors are curious to see the source. As I was one of the curious, the door was opened to me,

and there I beheld a large cupboard full of vapour, steaming up from the surface of a tank of clear hot water, of a temperature of 153 degrees of Fahrenheit. In the same apartment, near the source, is a flight of steps leading down to a tap inserted in the rock, through which the water is drawn for drinking. It is moderately saline to the taste, and reminds one very strongly of the waters of Wiesbaden.

The springs issuing from these rocks are numerous, and the district whence they issue is named, from its warmth, die Hölle, literally *hell*. Eight have received names, of which the principal are the URSPRUNG and the JUDENQUELLE, both having a temperature of 153°; and the BRUHQUELLE, or Felsenquelle, with a temperature of 145°. In chemical composition they are *muriated saline* waters, with a trace of iron, and very little carbonic acid gas; so that the iron is speedily deposited, and entirely lost when the waters are conducted for any distance and become cool. The quantity of muriate of soda in the pint is seventeen grains and a half, one grain and a half of muriate of lime, nearly three grains of sulphate of lime, half a grain of carbonate of magnesia, and one tenth of a grain of iron. In a word, they are extremely feeble, and, to be of use, must be drunk at the source and in considerable quantity. On the whole, the waters of Baden are but little valued; the Ursprung alone is drunk, while another near it, the Felsenquelle, is

left exposed to the elements just as it issues from the rock, barely supplying with a maintenance the old woman who knits her stockings by its brink, and offers a glass and a speech to those who approach it. I found a considerable ochreous deposit of iron on the sides and bottom of this well; and gas bubbles rose every now and then to the surface, but in no great number.

The springs of Baden have seen better days, and deserve a better fate than that which has befallen them; but, at the same time, they deserve little pity at the hands of the philanthropist; they have wantonly drawn upon themselves their ruin, and given themselves up to habits of dissipation, dress and paint, and coquetting, gambling and feasting, and leaving their native rocks for a gaudy saloon; seeking after gold, instead of, as in former times, contenting themselves with their native warmth, their salt, and their iron, at home. It is hardly credible, but nevertheless true, that these humblest of the mineral waters of the earth, holding their medicine by the tenderest thread, should have dared to put in an appearance, as the lawyers have it, in the drinking saloon on the other side of the valley; that, ashamed of their humble station at home, they should have clad themselves in a dress of iron pipe and putty, and grubbed themselves a way, mole like, in the earth, until they arrive, cold, and vapid, and spent, and useless, among the fashionable drinkers of the aristocratic bank of the

Oosbach. Yet such is the very truth, and a stinging commentary on fashion and fashionable existence. It is *not* the fashion to drink the mineral waters of the earth where God calls them up to the surface, and where they possess certain medical virtues ; but it *is* the fashion to drink them in a magnificent hall, issuing from a tap fixed in the side of a splendid marble column, where they have lost both temperature and saline constituents, and where they are medically worthless ; and then we may ask : Which side is hell now ? Why, the cool side of the Oosbach, where the Devil looks on with enjoyment, and where Truth and Simplicity weep.

And so, reader, if your friend says to you “ promiscuously,” that he is going to the waters of Baden, you may answer with Liston, when he felt puzzled by a French quotation that he couldn’t understand, “ I shouldn’t wonder ;” or you may, if you prefer it, reply with the query : “ Roulette or rouge et noir ?” or you may advise him, with Iago, to “ put money ” in his purse. Baden, among Balneologists, is a Bain de luxe ; in other words, a bathing place where there is amusement, gaiety, music, dancing, gambling, even hunting, in a delicious valley and surrounded by the most beautiful and charming scenery ; and those who visit Baden go for these, and not for its mineral waters. There are some delightful excursions practicable from Baden to the summits of the hills, to the neighbouring castles or points of view ; such

as the castle of Eberstein, and the romantic Murgthal, the valley of the Murg.

Baden, as we have seen, was known to those enquiring old fellows, the Romans; and here, among other places, they managed to make their pot boil at the expense of their neighbours, and without any trouble to themselves. For them, Baden was the *civitas Aurelii aquensis*, the water-yielding city of Aurelius. We are told that they had a station here, and they have left behind them traces of their habitation. There was a temple to Mereury, a god they were rather too fond of propitiating; and one of the hills in the neighbourhood is called, in his honour, Mereuriusberg; and there is a tower on that hill, probably serving as a point of observation for the gentleman in wings, when oblations were being offered up to him below. Of this temple of Mercury many remains are preserved in a kind of roofed terrace placed opposite the bath house; and there are said to have been discovered vapour baths in its basement.

The theory of the mineral water treatment embraces two principal features; firstly, the drinking of the waters, which implies, *primo*, that there are waters to be drunk; and, *secundo*, that there are bodies to receive the drink; and, secondly, a means of shaking down the waters to their proper level; which demands, *primo*, exercise with the limbs, and *secundo*, a place wherein to take exercise. So

that the Balneologist, if my reader will forgive so large a word, having seen the waters, at once turns round to look for the promenade where the waters are to be submitted to the first act of digestion. It will no longer be matter of surprise then to anybody, that, being on a terrace high up on the side of the hill, with no more walking ground than the quarter-deck of a bumboat, namely, three strides and overboard, I should have felt a little puzzled as to how the waters were to be shaken into the crevices of the inward man after they had been imbibed. While I was turning this matter in my mind, I perceived, exactly opposite and parallel with the bath house, a low building, a kind of brick-built shed, as long as the bath house, and with a melancholy dead wall towards me; but in the middle of that wall was a door, and it struck me as just possible that if I could open that door, I could see what was inside. So, as no one was near but the old woman at the Felsenquelle, whom I had already made my friend at the expense of a six-kreutzer piece, I advanced cautiously to the door, and, by good luck, finding it ajar, I stepped inside, and became, to my satisfaction, the sole inhabitant, as I thought, of the interior. Now this strange-looking building happened to be the very thing I was in search of; it was briefly a paved promenade for the use of the drinkers at the neighbouring well, and was originally open on the two sides; but as the drinkers no doubt found that their

promenade or portico admitted the winds as well as themselves ; and as the winds had a great knack of getting through the stiches of their dress, and making searching enquiries after their rheumatic joints, in truth, cooling the waters more quickly than might be agreeable, and turning the warm drink of the springs into icicles and snow balls, the winds had been most judiciously excluded from the portico, at least on one side, by the dead wall I have just mentioned, more to the comfort of the drinkers than to the improvement of the appearance of the edifice. But the other side was still open, and afforded a charming look-out upon the town, the valley, and the opposite hills, with a nearer view of the precise number of darns in an old pair of stockings hanging upon a line, in company with a shirt that was constructed of as many pieces as Joseph's coat. This side of the portico was the upper edge of a vertical wall, and required the protection of a rail to prevent unsteady drinkers from precipitating themselves, like Marcus Curtius, into the gulph below.

I was just concluding, at the end of a brief passage of thought, that the portico was not a very tempting promenade for invalids and persons of a melancholy turn of mind, and beginning to find some excuse for the charming promenades around the Curhaus, and ceasing to wonder that the portico should look so friendless and empty, when something moved behind a log of wood,

and was followed by the head and shoulders of a man, looking very pale, and supporting himself on two sticks, with which he soon after made a pretty decent amble along the pavement. This was *the* patient at Baden Baden; I was glad I had seen him, and I turned towards the dead wall and pretended to be decyphering some stones with Roman figures and inscriptions on them, that I might have a good look at him; and I longed to ask him a few questions, but he looked so forlorn and miserable that I let the poor creature alone. I remember once seeing an apparition that was forcibly brought to my mind by the extraordinary appearance of this man. When THE QUEEN visited Guildhall, in 1851, the supper was served in the crypt, under the hall, and late in the evening I had gone there with a view of looking at the curious old place lighted up as it was on this occasion. The atmosphere was hot and suffocating, and I was about coming away when I saw a group of persons staring curiously at a figure of a man in armour, standing by the side of one of the low arched doors. I was struck, as the rest seemed to be, at the careful representation of the face of the figure through the visor of the helmet; the face was yellow and waxy, with a light tint of red on the cheeks, the eyes were bright and lustrous, like glass, and gave the thing an extraordinary and unearthly appearance. It was impossible to look upon it without having one's attention riveted, and I soon became one

of a group of gazers at this singular figure. I had made up my mind that the face was wax, when one of the spectators suddenly exclaimed, "it moves!" and then I perceived a shudder pass through its entire frame, then it swayed a few times backward and forward, and then, still without any change of expression of the face, it reeled forwards, the party quickly making way for its progress, and stalked, with a staggering gait, into the darkness. I concluded, on after reflection, that the man, for such it was clear he was, had been standing in the pillory of his steel armour the whole evening, breathing an infected atmosphere until he had become partially asphyxiated, and had been stimulated to a last effort to shake off the trance by the notice and remarks of the spectators.

On the wall of our portico, and in two recesses at either end, are contained a number of fragments of a Roman edifice, supposed to have been the temple of Mercury; there are Roman bricks, and tiles, and masonry, with rude specimens of sculpture. One of the latter was a slab that had been used as the facing of a spring; in the centre was the face of a satyr, the ancient personification of the leprosy, the mouth holding the pipe that gave issue to the water; then above it was the symbol of the springs, an antelope, expressive of a mountainous habit, with the tail of a fish, illustrative of water. On this slab, moreover, were the letters Co. H. xxvi, which I

rendered, twenty-sixth cohort ; and Vo. LC.R. which seems to me to signify of the fifth Legion of Cornelius, of the Roman army. On other stones there occurred the names of Aurelius Maximus, Cornelius Auquandus, and Marcus Aurelius Antoninus.

Nothing strikes the visitor at Baden more than the magnificence of the hotels. I was located in the Badische Hof, or Baden hotel, where I found an establishment of baths, and, in the centre of the building, a grand hall, the entire height of the edifice, and lighted from the roof. The roof was supported by sixteen enormous columns, and, outside the columns, were four wide galleries, the lower gallery being reached by a double flight of stairs. From these galleries the inmates could look down upon the floor of the hall, and they also gave entrance to the apartments and bed-rooms, and communicated with every part of the house. Then the dining-room was equally grand in its proportions, and decorated with paintings. The Victoria hotel, again, is another building of extraordinary magnificence ; looking like a palace rather than a house of temporary residence and entertainment.

Walking up the valley on the south side of the Oosbach, we come to a long handsome building with a terrace portico running its whole length, and an entrance to the Cursaal, or drinking-hall, where, as I have mentioned, the waters from the Ursprung, on the other side

of the valley, are brought by means of pipes, and made to issue from taps fixed around a marble pillar in the centre of the hall; the water having lost heat and taste, and become vapid and useless. In this hall are collected also many objects of taste, with pictures, engravings, and books. The wall of the portico, or covered terrace, is ornamented with a series of well-executed paintings, representing striking passages from the German poets.

Beyond the Drinking Hall, is a green surrounded with trees, with avenues at either side, flanked by little shops where pretty things of native manufacture, with Bohemian glass, and nicknacks from Paris, are to be purchased—a kind of bazaar; while across the top of the green is the fine building devoted to the assembly rooms, the concerts, balls, and gaming tables. Outside, in the cool of the evening, are tables with little groups sipping coffee or ices, smoking and chatting, while listening to the sweet music of an excellent band which poured forth its harmony from a neighbouring pavilion; while others are availing themselves of the promenade. Near one of the groups I recognized a lady who was travelling alone with her daughter. I had met the lady twice before on my journey, and I looked upon her with a deeper interest because she had been at Carlsbad, which I had failed to reach, and was on her way from Carlsbad when I first saw her. Finding that she was a fresh arrival at Baden, I conducted her through the assembly rooms, and

gave her her first sight of gaming tables and gamblers. One of the most striking things at a gaming table is the comprehensiveness of vision, the accuracy, the rapidity of calculation, and the coolness of the four men who take charge of the table; *croupiers*, I think they are called; and yet I was told that their duties frequently injured their health very seriously, from the continued state of tension in which their brain and nerves are kept for so many hours daily. But, to look at them, one could believe that it was not a matter of the least moment whether they lost or won; not a muscle of their fixed features stirred while they drew in or tossed out their money. Then around the table there were the experienced players, calm and steady; the timid adventurers hesitating, at the moment of putting down the coin, whether it should be red or black; then the player who took his game from his card, and, after a run of reds, plays on black and loses, and then follows up the black until luck changes colour; and then there were the sandy Saxon locks of my friend from England; he was angry at his want of luck, but too proud to give in. I heard him whisper to his friend that he was "almost cleared out;" and yet I'll be bound to say that he stuck to the minx Fortune until she fairly jilted him, and only gave in because his lockers were empty. My lady friend was already far advanced in the theory of the game, and whispered to me, "Do you see, that gentleman always wins when he places

a small stake on the table, and always loses when he doubles it. I should like to give him a hint. It pains me to see him lose in that way, when my advice might save him." I saw the lady had caught the infection, and gently led her to another table. Here a young girl approached behind the chairs of the players, and, after some nervous twitches of the features, and a change of complexion from red to white, she tossed or rather let drop a crown piece on the table; she won, and picked up the two pieces. Waiting a little to gather courage, she ventured a second time, and won; then, instead of one piece, she left two upon the board, and these were doubled. In less than half an hour, when we returned past the table, she had a pile of silver coin before her; she had earned her week's lodging, and more; her first stake was probably her last piece, and in a short time she was in funds. Alas! the destruction that that one night of gain might bring. One shudders as one reads, in the guide books, "the gaming rooms are open from eleven in the morning until eleven at night." It was a long way short of eleven when I conducted my lady friends home to their hotel at the Victoria; and as I selected a telescope fan of sandal-wood for the younger lady, who was shortly returning to school, I hope to be remembered by her as the stranger at Baden, who gave her her first lesson in gambling. Good night, ladies. Baden, good night.

But although we may say good night to Baden, we may not so easily dispose of the BADISCHEN SPAS, of which there are four that demand a passing notice; namely, the *thermal* springs of Badenweiler, the *sulphureous* springs of Langenbrücken, and the *sulphated acidulous chalybeate* waters of Petersthal and Rippoldsau.

BADENWEILER is situated in the southern aspect of the Black Forest, between Freyburg and Basel, in Upper Briesgau, and is easily reached from the Müllheim station of the Baden Railway. Its elevation above the sea is 1450 feet; it enjoys an invigorating and healthy climate, with the beautiful sylvan scenery of the Black Forest; and it possesses a whey establishment for the supply of goat's milk and whey. The temperature of its spring is between 82 and 83 degrees of Fahrenheit, and the waters contain between seven and eight grains of solid salts in the pint; the chief of which are sulphates of soda, potash, and lime. It is therefore a *thermal sulphated saline* water.

LANGENBRUCKEN is one of the stations between Heidelberg and Bruchsal, about sixteen miles from the former place. It has around it the beautiful scenery of the Black Forest, and the fertile plain of Baden stretching away to the Rhine. The hills of the Black Forest shield it from the north and east winds, and its elevation above the sea is 440 feet. Its springs are four in num-

ber: the TRINKQUELLE, AMALIENQUELLE, SPRINGQUELLE, and GASQUELLE; and their temperature, 52 to 57 degrees. Besides the sulphuretted hydrogen, with some carbonic acid gas and nitrogen, the solid elements in a pint of the water amount to four or five grains; the chief constituents being carbonates of lime and magnesia, with four or five hundredths of a grain of iron, and some bitumen. From the abundance of gaseous elements in the waters, there are also appliances for gas baths.

PETERSTHAL is a village in one of the small valleys at the southern foot of Mount Kniebis, in the Black Forest, opening into the Renchthal, and upwards of 1200 feet above the level of the sea. It has four springs, namely, STAHLQUELLE or Petersquelle, BADEQUELLE, SALZQUELLE, and SOPHIENQUELLE or Gasquelle. The waters contain from five to seven grains of sulphate of soda, and about three tenths of a grain of carbonate of iron; the total amount of salts in a pint being from 21 to 25 grains, of which ten or eleven are bicarbonate of lime. The names of the springs were given at a time when their chemical analysis was unknown, and when it was believed that one contained the largest quantity of Glauber's salts; one, an excess of iron; another, of carbonic acid gas; while the fourth was considered the most suitable for baths.

RIPPOLDSAU is a village and bathing establishment, also situated at the foot of Mount Kniebis, on its south-

eastern declivity, and at no great distance from Petersthal, which its waters resemble, but are much more powerful. Rippoldsau is in the Kinzigthal, 1886 feet above the level of the sea, and its waters are remarkable for their great quantity of carbonic acid, and considerable proportion of sulphate of soda, with carbonates of lime, iron, and manganese. The springs are four in number : JOSEPHSQUELLE, LEOPOLDSQUELLE, WENZELSQUELLE, and BADEQUELLE; their temperature varying between 45 and 50 degrees of Fahrenheit. Rippoldsau possesses a handsome bathing establishment, containing thirty-three cabinets and a warm room for the bathers after quitting the bath; with promenades and other attractions.

The waters of Rippoldsau are open to the objection of being too largely impregnated with lime; but an ingenious and eminent chemist, named Kolreuter, has succeeded in removing this objection, and converting the water into a very valuable medicine, by precipitating the lime and substituting soda in its place. To this partly natural and partly artificial water, so prepared, he gives the name of NATROINE; and a pint of the Josephsquelle, so prepared, contains 20 grains of bicarbonate of soda, with only four of bicarbonate of lime instead of $12\frac{3}{4}$; while the sulphate of soda is increased in quantity from 9 to nearly 16 grains, and the sulphate of lime is removed altogether. In like manner, Kolreuter prepares, out of

the waters of the Leopoldsquelle, a sulphuretted natroine, which is charged with thirty grains of bicarbonate of soda, and twelve of sulphate of soda, with six cubic inches of sulphuretted hydrogen, to the pint.

CHAPTER XIX.

WILDBAD.

HAVING announced to the porter of the Badische Hof my intention of proceeding to Wildbad, and my wish to set off as early as possible, he was not long in procuring for me a little carriage for that purpose ; and I was soon *en route* up the valley of Oosbach, and across the mountains of the Black Forest, completing the journey in something less than eight hours.

The first portion of this journey, as far as the Murgthal and the Castle of Eberstein, a residence of the Grand Duke, is one of the excursions from Baden, and presents all the picturesque beauties of a winding valley, gradually closing upon the traveller, and at last terminating abruptly against the declivity of a range of hills ; requiring that the carriage road should turn and turn again, forming a zigzag, before reaching the top. At each turn of the valley, some new beauty came into view, and the way presented a succession of panoramic views of exquisite

loveliness. On the road were several groups of pilgrims making the journey ; here a party of young people with knapsacks ; there a joyful knot who seemed enjoying the scene to the full ; while ever and anon the countrywomen sprinkled the path, some carrying burdens on their heads and exhibiting a body that for symmetry and pliability was as perfect as that of our first mother. I silently wished that our London belles could see these magnificent torsos, and compare them with the compressed, flattened, furrowed waists that are to be seen night and morning in some of their own cheval mirrors.

Of the villages on our way I cannot speak with the same degree of admiration ; the people seemed to have a propensity for collecting manure of all kinds directly under their windows ; so that what was not used to fatten the land, might serve as an incense for their nostrils. There is an excessively disagreeable scent, some time since fashionable in London, suggesting the idea of rotten wood, called Patehouly, an oriental plant ; and it occurred to me that the admirers of such an unpleasant odour as that, could hardly wonder at the depraved tastes of the villagers of the Black Forest. In these villages I saw several instances of goitre, and the children were squalid and dwarfish, with soft and twisted bones, grey inexpressive eyes, and dry faded hair, resembling so much hemp. The coachmen of Germany act upon a "rule of contraries," as compared with us, in the driving of their carriages ; for

whereas in England we pass upon the right, and are passed on the left of the road, they do just the reverse. I appealed to the coachman, who was aware of our practice, for the reason; and he explained it by saying that the roads being unprotected at the edge, the German mode always placed the driver on the side of danger, and enabled him to see where his wheels were going.

Having crept up the side of the declivity before us, we were now fairly in the Black Forest, amidst tall sombre pine trees, and with nothing visible around but the forest track which we were now pursuing. Occasionally we came to a break on the side of a hill, and had a peep at a pretty bit of valley, or an old castle perched on an eminence. Now it is Schloss Eberstein, a demure-looking building in the midst of a grove of chestnuts; then it is the peak of a hill surmounted by the Murgthurm, and anon it is the Murgthal itself, inducing a wish to linger on the road and explore its beauties. Then comes a clearing in the wood, with the rude huts of the charcoal-burners; and I looked out for the embodiment of Rosa Bonheur's picture. Next followed a bleak mountain top, on which trees refused to grow; and then we descend a precipitous road, sliding the greater part of the way, and arrive at the secluded valley and wayside inn of Herrenalb, where we are to dine, and our horses obtain refreshment and rest.

The exterior of our hostelry gave little promise of

generous cheer, and the interior was as little inviting; there was a middle passage through the house, a room at either side, and a kitchen at the back; into the room on the right I was ushered; it was low pitched, bestowed with tables and stools, and had been doubtless the scene of many joyous carousals. The walls were hung round with coloured prints, representing the cruelty of an uncle towards a prince of the blood; the poverty and virtue of the prince, his courage and his valour, the gathering popularity of his cause, and his final triumphs over his enemy; with his restoration, coronation, and multiplication, and the eternal happiness of every body and every thing, even to the trees and rocks, which look down on the scene with a broad grin. But this superb exhibition of the old masters, a rival of Manchester in its way, would not allay hunger, and I was beginning to regret that I had not taken my share of the brown sour loaf with the horses at Gernsbaeh, when my heart palpitated at the approach of a pair of wooden shoes, that made themselves audible in the passage. "Good morning" said a pretty maiden with an apron, who looked as if she had grown out of the wooden shoes, and had been rooted there all her life. "Good morning" she repeated, with a smile which makes mother tongue out of the rudest syllables that were ever braaced together. "Good morning," replied I in return, with a corresponding smile which turned us into the best friends in the world in an

instant. Depend on it, thought I, a smile is a bit of heaven given to man and woman to brighten our existence; and though the maiden didn't speak, but only spread a white napkin on the rough table, I could see that she was of the same opinion. "I wish you a good appetite," she continued; this time placing before me a bit of boiled meat, deliciously sweet and tender. "What meat is this?" said I, hardly recovered from the effects of the smile. "Ox flesh," replied she, with a look of wonder at my barbarian ignorance; but certainly it was the nicest boiled beef I had ever tasted. Then she had set before me three little saucers, with contents that I began successively to investigate; number one, very thin slices of cucumber in vinegar, good! number two, red berries, apparently whortle berries, preserved with sugar, good! number three, a whitish pulp like turnips, strongly acidulous, best! thought I; and I managed to empty the saucer. "What is this very agreeable sauce, Madchen?" "Cartofflen," was her answer; which is the equivalent, in German, for potatoes. She had brought me half a bottle of Affenthaler, which, in the vacation between the courses, I next proceeded to analyse; capital! I exclaimed, mentally; and I felt my feet stretching out under the table to their utmost length, while my chest expanded with a full inspiration of content. Hurra! thought I, here is the second course; a nice little joint of roast meat, which the maiden called

swine flesh ; pork, reflected I ; two very small trout, in the attitude of eternity, with their tails in their mouths ; a dish of potatoes cut up into angular and polygonal fragments and reeking with gravy. Being still hungry, I attacked the “*pièce de resistance*,” the swine flesh ; then the scale of hunger settling down, and that of curiosity rising up, I set about an investigation of the trout, which resulted in proving eternity evanescent ; then I made a separate attack upon the potatoes ; and then tried an olio of them all. When all had disappeared, I composed myself for a third course ; but finding no more coming, comforted myself with the remains of my bottle. I had been very eager to keep moving before dinner, but, after it, began to feel that I should have no objection to remain in my new abode for the rest of the day ; but my Kutscher entertained a different view of the case, and broke in upon my after-dinner reflections with the announcement that the horses had dined and wanted to be off.

Fort ! ejaculated the Kutseher, as he took his seat on the box, and gave substance to his exclamation by bringing down his whip on the horses’ sides ; and we were once more climbing a hill, and soon after entered the forest of one of the higher hills of the mountain range. The air of the forest was cold and chill ; the pines were taller than any I had before seen, long tresses of the old man moss hung from their branches and trunks, giving

them a hoary appearance, and the forest was silent and gloomy. I could realise all the meaning of the term, Black Forest, and I was not sorry when daylight appeared in the distance; and the Kutseher, pointing to a deep rent in the earth, green with its umbrageous covering of trees, exclaimed, "There is Wildbad." But although we were in sight of Wildbad, we were not yet on the ground of the valley; to reach it, we had to descend between twelve and fifteen hundred feet by means of a series of zigzags, and at last emerged on the high road to the village.

The little river Enz, in its busy way towards the Neekar, runs by the side of the causeway, and seemed proud of being as useful as well as an ornamental stream. It bore a long narrow raft of wood on its bosom, and contributed its store from the neighbouring forests to those giant rafts that are met with in their progress down the Rhine. Wildbad itself is 1333 feet above the level of the sea; and its village is little more than one long street, lying by the side of this stream, and swelling at its upper extremity into an oblong square, with some large houses on the right, and the Curhaus on the left, terminated across the end by a handsome building in red sandstone, of the Byzantine period of architecture, the bath house. The little square is laid out with avenues of acacias, and in its middle is a music pavilion, whence the enlivening strains of a German opera were

pouring forth as my barouche drew up to a colonnade on the left, the entrance of the Curhaus.

At the end of the colonnade of the Curhaus, which in bad weather served as a promenade for the invalids, was one side of the bath house, built, as I have just mentioned, of red sandstone, with Moorish pillars, round arches, and zigzag ornament, the common style of Byzantine architecture; and here, under a long narrow portico, was a double flight of steps leading to an oblong area in which were three granite troughs fixed to the wall; the granite troughs being the recipients of the waters of the DRINKING SPRING, which fall into them from a pair of short pipes issuing from a niche above each trough. The drinking spring has a temperature of 92° of Fahrenheit, and its waters contain 56 grains of solid salts in the pint; namely, $24\frac{1}{2}$ of muriate of soda, nine of carbonate of soda, as many of carbonate of lime, three and a half of sulphate of soda, nearly two of sulphate of potash, one of carbonate of magnesia, and six and a half of silica.

As the afternoon was waning, I lost no time in presenting myself to Grafrath, Dr. Burekhardt, who kindly showed me over the bath house. The baths have a peculiarity of construction which is not met with in any other of the baths which I have seen; the ground-floor of the building is divided into apartments termed *Piseines*, of which there are twenty-four. These *piseines* are square

rooms of graceful appearance, ornamented with Moorish columns and arches, like the exterior, and their floor is separated by a low wall into two portions, while the four corners have a separate walled screen, forming each a private bath. The floor is filled with the waters of the spring to the depth of about two feet, and each piscine, in addition to the four private baths, is capable of accommodating a party of bathers, who bathe in common. There are piscines for the ladies and piscines for the men, and the same arrangement exists throughout.

As I made a practice of drinking at every spring, and bathing in every bath along my route, I was anxious to feel the delights that I had heard so abundantly attributed to the baths of Wildbad ; baths which had been so recently enjoyed by the Empress of Russia ; and although the closing hour for the day had arrived, Dr. Burckhardt, like Saul, ordered the sun to stand still for me, while I took my bath. I had the whole piscine to myself, and was very soon the exact opposite of a fish out of water. The water was beautifully clear, had a greenish tinge, and a bottom of red sand, through which in several places the crystal element might be seen streaming up, heaving like a pigmy quicksand, and giving passage here and there to bubbles of gas. The temperature of the water was 95°, and, stretched upon the warm sand for more than half an hour, I lay in meditative repose.

These baths are distinguished by different names ;

one is the FURSTENBAD, or Princes bath, with a temperature of 95 to 97 degrees of Fahrenheit; another is the HERRENBAD, or Gentlemen's bath, with a temperature of 94 to 95 degrees, and two compartments, one capable of bathing twenty-two persons, the other fifteen; next comes the FRAUENBAD, or Ladies' bath, of the same temperature as the Herrenbad, and with two compartments, holding, respectively, twenty and fifteen bathers; then there is the NEUBAD, with two compartments for men and the same for women, each accommodating forty persons, the heat of the water being 90 to 91 degrees; and lastly, there is the GEMEINMANNERBAD, or common peoples' bath.

The HAUPTQUELLE, or principal source of these waters, flows from a cleft in the rock, which, from its great heat, is uncivilly called the Hölle, literally Hell. The temperature of the waters at this point is very nearly 100 degrees of Fahrenheit, and they lose their heat before reaching the different baths, as we have already seen. The chemical constituents of these thermal waters are very trifling, being only three grains and a half of solid salts to the pint; bringing them, in fact, into the category of *negative waters*. Of these three grains and a half, nearly two are common salt; half a grain, carbonate of soda; a little more than half a grain, sulphates of soda and potash; one grain, carbonates of lime and magnesia; three-tenths of a grain, silica; and

two tenths, carbonate of iron and manganese. Congratulating myself on my agreeable sensations, and communing with my thoughts on the charms of the delicious bed which served me as a couch, I almost wished to have had a rheumatism, or a neuralgia, or a sciatica, or a stiff joint, or some other dolorous complaint, or a surfeit of the nerves, that I might feel it in process of being softened and dissolved away by these delicious waters; and I no longer wondered that Wildbad had become so favourite a resort for such affections.

The bath house communicates directly with the Curhaus, so that invalids may be wheeled from their bedroom to the bath, or they may be lowered through trap doors and swung down into the water like a spider on his line; and have almost anything in the shape of convenience, but that of the bath being taken bodily up to them. Then the Curhaus has its assembly rooms, and its reading rooms, and its dining rooms; with its prettily laid-out gardens and promenades, its summer houses, its rustic seats, and its pavilions for sweet discourse; in a word, all that can constitute a happy valley may be met with at Wildbad, with every luxury of nature and of art.

But of all the delightful memories of the past which I shall carry to my grave, was a moonlight walk up the valley to the hills, by the side of the babbling, brawling, tumbling little Enz. How the little fellow exerted him-

self to gain my good graces ; how he ran and laughed, and peeped out from among the rocks and bushes, and then hid himself again or threw a somersault from ledge to ledge of his rocky bed, and sung his musieal refrain all the while : “ Come on, come on, come on.” And on I went, until I almost reached his source, and Prudence said, return ! Quitting the bath house, I crossed a light bridge, and then found myself in a grove with handsome houses on my side ; then the houses ceased, and the grove went on, spreading up the side of the hill into an ornamental garden ; then there was a long broad walk, which ran like a terrace by the side of the stream ; then came another and another bridge, and then the path started off alone, without trees to guide it or mark its course, having as its companion the joyous little brook, and on it went until it seemed lost in the forest that grew down to its edge ; and then I could fancy it rising up to the very horizon, and becoming the milky way. In one part, the declivity of the hill descends to the side of the brook, and is steep, and wild, and rocky.

My kutscher from Baden had formed some hazy idea of being my mentor and my guide through what remained of the Black Forest to the nearest railway station, and had already suggested to my mind the impossibility of getting on without him. So, at a quarter past six the following morning, when I took my seat on the roof of the Poste diligence, I was not surprised to receive a

greeting from him ; he had come to see if I were a man of my word, and intended to be off at the break of day as I had threatened. "The air is 'frisch,' " said he, which was equivalent to cold ; and he was not far from right, for the climate of Wildbad is naturally bleak from its mountainous position, and I was not sorry to see the rising sun, at first gilding the summits of the hills around Wildbad, lighting up the red stems of the Scotch firs like fire, and then gradually creeping down the sides of the mountains to the plains. The valley of Wildbad is considerably narrower and deeper than that of Langenschwalbach, the hills around it rising to an elevation of twelve and fifteen hundred feet ; and the little town looks cradled in its hollow, at this hour of the morning, like a sleeping child ; the wooded slopes descending with a sudden sweep to its very doors. And then in passing along the street, if we look up, we see the green trees hanging in the sky, with their stems and roots as though implanted in the house tops.

The route from Wildbad to the border of the forest, where we leave the cool shade of the pine forests for the cultivated fields, I thought more beautiful than my journey of the previous day from Baden ; it was not so wild, nor so dark, nor so desolate ; there was more life and more variety, without any sacrifice of grandeur and richness of scenery. First, we passed through the sleeping village of Culmbach, where a shoot from the neigh-

bouring hill showed how the pine shafts were brought from the mountain to the brook, where they were bound together to form rafts. Then the brook widened at Höfen into a wide trout stream, ruffled by the morning breeze into a pigmy sea. And then our course lay through a beautiful stretch of valley scenery, closing with Neuenberg, where a wooded hill, surmounted by the tall solitary gable of a ruined convent, bars our way, and where we change horses.

At Neuenberg, we wind around the ruined-topped hill, and, emerging from the town, ascend a steep mountain road, from which the view, looking back, is extremely beautiful. First, there is the charming and picturesque valley; then the tall solitary hill in the midst, with its ruined convent; lower down, the village church and grave yard hanging on the slope of the hill; and then, at its foot, the roofs and chimneys of Neuenberg. We had taken up a fresh postilion at our last change; a dashing fellow with his yellow jacket, horn with party-coloured cord and tassels hanging on his back, and band round his arm, the red and black badge of Würtemberg; then there were the black glazed hat and white leather continuations; altogether the fellow was something to admire, but he did not think himself complete without the eternal cigar in his mouth. He unfortunately selected for the moment of lighting his cigar our ascent of the hill, which had nearly cost us a roll over its side; the

wind was a little too high to enable him to keep his lucifer alight, and, to effect his object, after several failures, he contrived to get lucifer, cigar, and face inside his hat, and the latter happening to catch fire, a scramble ensued, during which the wrong rein was pulled, and our horses, none of the steadiest, were capering up the bank, with the wheels of the diligence within an inch of the edge of the precipice.

On reaching the summit of the hill beyond Neuenberg, we were soon free of the forest, and rolling along amid apple trees, and corn fields, and vineyards, in the beautiful plain of Würtemberg, with a far distant view of the surrounding country. Our next halt was Pforzheim, after passing through the villages of Britzingen, Eulingen, and Luzberg. The latter is a steep hill, clothed with grape vines to its highest ridge, and bordered by a rich and luxuriant cultivated plain. At a short distance beyond Pforzheim is the station of Mühlaker, on a junction of the Würtemberg and Baden lines of railway; and, in another hour, I was at Bruchsal, and on my way through Baden and Darmstadt to Frankfort; peeping, as I passed, into the nook where the castle of Heidelberg rears its ruined walls, and where so many happy hours of my student life were passed. Almost every hill, to the grand old Meliboehus himself, brought back pleasing memories to my mind, and made me feel for the moment in the home of my school days.

CHAPTER XX.

KREUZNACH.

It was exactly a week after my first departure from Frankfort that I again took leave of it, this time on my western journey, first to Castel, and then by steam-boat to Bingen. I have already explained my good fortune in being able to devote a quiet half-hour to Ariadne in the early morning, so that it was by the first train and first boat that I now resumed my travels. I was again gliding along by the side of the Maine, again looking forth upon the range of the Taunus mountains, again in view of the Odenwald and Melibochus, with the Rhine and Mayence in my front, and the Hardt mountains of France, with Mount Tonnere in the distant background. Afloat, I was sailing calmly down the richest and most luxuriant part of the Rhine, though not the grandest and most picturesque. Nassau with the Rheingau lay to the right, and Hesse Darmstadt to the left, while, fringing the border of the river, were Bieberich, Oestrich, Johannis-

berg, surmounted by the chateau of Metternich, Geisenheim, and Rüdelsheim, most of them names dear to our dinner recollections. At Bingen, the Rhine seems stopped in its course, opposed by a mountain barrier, through which no issue is perceptible, while the broad stream, in its amphitheatre of hills, has more the character of a lake than a river. It was at this point, ages ago, that the Rhine maintained its fierce struggle with the rocks, and was finally triumphant, forcing a passage against all their resistance; and even now, the good stream is still ruffled as it passes the spot, and suggests the idea that it has not yet forgotten the bitter strife.

From Bingen, my way lay along the banks of the Nahe, a stream which runs parallel with the Moselle, and takes the upper border of the range of volcanic mountains that cross the Rhine from the south-eastern portion of the Rhenish provinces of Prussia into Nassau, as the latter river does the lower or western boundary. The valley of the Nahe is one of great beauty, and about thirty miles in length, while the distance of Kreuznach from Bingen is not more than seven miles. A railroad is already in progress along the banks of the river, and is making preparations to span it by a bridge near the entrance of the little town. At Bingen, the road enters the valley between high hills, Rochusberg and Rupertsberg; but the hills to the east, on the side of Hesse Darmstadt, quickly subside into the plain, while those of Prussia,

on the west, form the boundary of the causeway the whole distance to Kreuznach. These hills are covered with vineyards which reach down to the margin of the road, while the valley is green with its meadows and orchards; and the country beyond, rich in cultivation.

Kreuznaeh is a small town, situated at a point where the valley begins to contract, and where it makes a bend to the westward to enter among the mountains; hence the rocks rise on either side and behind it, and the rich, cultivated plain becomes rapidly transformed into a wild mountainous valley, with here and there an opening, like a huge amphitheatre, bordered by rugged, perpendicular pinnacles and walls of volcanic origin, principally red porphyry. The river Nahe, after winding for many miles through these rocky defiles, issues from the cleft of the mountains at Kreuznach, and divides into two branches, which meet each other again a little lower down, and enclose a long strip of island, on which are situated a part of Kreuznaeh, the remains of its ancient cathedral, and the Eliza source of the mineral waters. To the west of the stream and the island, the principal part of the town is placed, while a suburb exists on the opposite side; the two divisions of the town and the island being all connected by the same bridge. Then the south and broader end of the island is occupied with a street of handsome houses; a road, bounded by an avenue of trees at either side for the promenader; and, further on, by the Curhaus

and ornamental garden, laid out in pleasant walks. At the extremity of the garden, and at the bluff angle which splits the stream in twain, is the chief drinking spring of the place, the Eliza well.

It was in the first of the pretty houses of the island, that, in my way from the bridge to the garden of the Curhaus, I found the Doctor Engelmann, with whose writings on Kreuznach I had already made a previous acquaintance; with him I visited several of the hotels, in which baths are prepared, and the baths of the Curhaus; he showed me the way that the temperature of the baths was attained by the mixture of hot water with cold; and the contrivance adopted at the Curhaus, and of which he expressed his disapproval, of heating the baths by means of steam introduced beneath them in a separate chamber; and explained that the baths were sometimes prepared by heating the waters of the spring, and sometimes by the addition of *mother liquor* brought from the saline works and added to the hot water of the baths in a proper proportion. From the baths we proceeded to the ELIZA WELL, and tasted its water, which is clear, saline, and rather bitterish, with a temperature of 54 degrees of Fahrenheit.

Quitting the Curhaus gardens, we crossed the smaller arm of the stream, and followed a good road along the valley, for about half a mile, to the Carshalle, where we found the principal spring of the salt-works; a spring,

rich in saline elements, and the source from which the majority of the baths in the town are supplied. Again mounting our earriage, we entered the valley of the salines, and, leaving the salt-works and the stream on our left, continued our progress to the village of Münster: here were other salt-works, and an abundant sprudel, by which the water issues from its source; the temperature of the water being 86 degrees of Fahrenheit, while that of the Carshalle is only 75 degrees.

We were now in face of that magnificent rock of red porphyry called the Rheingrafenstein, bathed at its foot by the waters of the Nahe; to our right, and some distance away, in the midst of a flat plain, surrounded by an amphitheatre of rocks, rose a handsome conical hill, surmounted by the ruins of a castle famous in history, namely, Ebernberg; while, further to the right, and higher up the stream, we came to a terrace road, flanked by a wall of precipitous rock, called, on account of its red colour, the Rothenfels. From this terrace a beautiful view is obtained of the little plain, hemmed in on every side, the Nahe pursuing its serpent-like course at the foot of the terrace; the pretty wooded hill, with Schloss Ebernberg in the middle of the plain; the quiet village of Münster Stein, with its salt-works; and, high above all, the pinnacled rock of the Rheingrafenstein, spurning with its foot of porphyry the stream that laves its base. Through this secluded valley-plain the railway is already

rearing its crest, entering by a terrae at the foot of the range of hills that lead to the Rheingrafenstein, then crossing the river in front of Münster, then following the terrae at the base of Rothenfels, and plunging into a narrow defile in the direction of the mountain of Lemberg. At this point, also, we have beneath our eye a part of three kingdoms: the Nahe, at the foot of the terrace, is the frontier line of Prussia and Bavaria; the plain before us, with the castle of Ebernberg, is Bavarian; Münster and the Rheingrafenstein are both in Prussia; while the land at the foot of the mountain, on its south and west, is the territory of Hesse Darmstadt.

The waters of Kreuznaeh owe their special virtues to bromine and iodine; but principally to the former; for whose sake alone the salt-works are kept in operation, the quantity of salt and iodine being very trivial, but the quantity of bromine exported annually considerable. Bromine and iodine are both metals, and have many points of resemblance with each other, the chief and most important being their medical properties, which are very analogous. The source of the springs is the porphyry rock, in which all the chemical constituents of the waters are found. Besides bromine and iodine, the waters contain muriate of soda in considerable proportion; hence they belong to the class of BROMATED MURIATED SALINE WATERS. Dr. Englemann calls them iodated and bromated saline waters; but the quantity of

iodine is really so small, one three-hundredth of a grain combined with magnesia, in a pint, that I think it would only lead to error to admit it to be a component of value.

In the water of the Eliza well, which is that chiefly used for drinking, the proportions of its saline elements in a pint are as follow: muriate of soda, nearly seventy-three grains; muriate of lime, thirteen grains; muriate of magnesia, four grains; and a little more than half a grain each of muriates of potash and lithium; bromide of magnesia, a little more than a quarter of a grain; iodide of magnesia, one three-hundredth of a grain; carbonate of lime, one grain and a half; carbonate of barytes, one hundredth of a grain; oxide of iron, one tenth of a grain: and a very small quantity of manganese, silica, and phosphate of alumina; amounting altogether to ninety-four grains. In the Carshalle spring there are 104 grains of solid salts to the pint; and this water, as I have before said, is employed wholly for baths.

I have already observed that the mother lye of the waters—in German, the *mutterlauge*—is largely used for baths; being added to a given quantity of water, in such proportion as may be thought necessary by the physician. This substance is exported either in its fluid state or dry, and, by its means, baths exactly resembling those of Kreuznach may be made in any part of the world. The mother lye is the fluid which remains in the boiling pans

of the salt-works after the salt has been crystallized ; it is a yellowish brown, transparent liquid, of the consistence of syrup ; salt, bitter, and pungent to the taste, and has a sea-water odour. About one-third of its bulk is solid salts, which, altered in their relations by boiling and the crystallization of the salts, are very nearly as follow : muriates, lime, 18 parts ; magnesia, $2\frac{1}{2}$; soda, $2\frac{1}{2}$; potash, $1\frac{1}{2}$; and bromide of soda, something more than half a part ; the iodide of soda being a mere trace. No sulphates are found either in the springs or in the mother lye.

There are several springs at Kreuznach, the principal of which are the ELIZA, or drinking spring ; the CARSHALLE, which is used for baths ; the THEODORSHALLE, a spring which arises in the bed of the river and supplies the baths of the Curhaus ; and a spring which supplies the Urania hotel. Besides the drinking of the waters and the baths, both of which are efficient remedies, medical advantages are found to result from inhalation of the air of the salt-works, which is certainly very agreeable and refreshing, and is supposed to possess properties similar to those of sea air. Hence, Dr. Englemann advises that, not only in fine and dry weather, but also in damp weather, patients may congregate under the sheds of the graduation or filtering works, and take their walk or seat there in preference to remaining at home.

The country around Kreuznach presents many points

of interest, and is delightfully situated for excursions, and for the pursuits of botany and geology; while the lively Nahe, and its smaller tributary, the Alsenz, offer inducements to the disciple of Walton to follow his contemplative sport. Among other walks and excursions, is the ascent of the Rheingrafenstein, to the fragments of its ruined castle; the ruins of Ebernberg, where a good kitchen and good cheer console our griefs for the hard fate of the early Reformers, once prisoners within its walls; the ruins of Altenbaumburg; of the monastery Desibodenberg; of Schloss Dalberg; Schloss Sponheim; Schloss Dhaun; and the quicksilver mines near Obermasehel. While a longer excursion up the valley to the Porphyry mountains of Oberstein, in Oldenburg, places the visitor in a highly interesting geological field, and surrounds him with agates, ealedonies, and magnificent specimens of quartz.

It was not until our return towards Kreuznach, from our little circuit of the Salines, that I fully appreciated the growing importance of the town. New houses of large size were being erected around and in the neighbourhood of the Eliza Spring, and gradually converting the upper suburb of the place into its most important quarter. It was here that the larger hotels were situated, and here also that many others were in process of building. The evening found me enjoying the hospitality of Dr. Englemann and his amiable family, enjoying the post

of honour reserved for the chosen friend at his round table, and discussing, in their turn, mineral waters, coffee, physic, toast and butter, pickled herrings, scrofulous disorders, marmalade, and, finally, leprosy and some delicious wine. I felt as I can imagine many of the visitors at the Exhibition at Manchester must have recently felt, a yearning to give a day to each separate subject, particularly the last ; but as my day was destined to finish with that evening's night-cap, I was obliged to fill my stomach and my mind alternately, until, having to find my way home in the dark night, and steer a somewhat complex course to the Black Adler, or some such outlandish port, I used up the whole of the remains of my intellect, which just lasted me, like the spent wick of a tallow candle, until I tumbled into bed, and rehearsed the whole entertainment, from beginning to end, in my dreams. All that I remembered, the next morning, was, that the wine was of the Doctor's own growth, in his own vineyard, and had been selected from his choicest bin.

It was not without sundry yawns, and stretches of the muscles of progression, that I turned out of the Adler the next morning, and took my place at six o'clock in the Poste diligence for Bingen ; the only passenger. I again passed over my yesterday's ground, and found that I had said no more in its praise than it had deserved. At one point, a quantity of earth was gathered in our

road, the washings of the hill-side during a terrible storm, accompanied with a deluge of rain, that had occurred a week before. The vineyards, for several acres in extent, looked as if they had been ploughed up into deep channels, many of the vines were thrown flat upon the ground, and others were washed away by their roots; while, on the other side of the road, that which should have been a green meadow was converted into arable land, by a surface of earth washed away from the slope of the hill above. Arrived at Bingen, I had just time to look around me and admire the Rochusburg with its ruin on my right, and the Rupertsberg on my left, with the lake-like loveliness of the Rhine, and the luxuriant vineyards of Rüdesheim and Johannisberg on the opposite bank; when the tinkle of the steamer's bell warned me that I must prepare to embark for HOME.

I survived the picturesque beauties of the Rhine in its winding course through the mountain defile, and after an admiring look at Boppard, at Marxburg, at Stolzenfels, at Lahneck, and at Ehrenbreitstein, floated through the bridge of boats at Coblenz, and gave myself up to the steward, yielding to his invitation to *assist*, as the French have it, at a tedious dinner, which, beginning at Coblenz, scarcely finished where the Seven Giants point the way to Cologne. I had reason to regret that I did not continue my voyage to Cologne; for the savans whom I hoped to join at Bonn had taken a half-holiday

and a special train to the latter place, to return, as I was informed, at midnight. Bonn was alive with the greeting which she was giving to the learned men of Europe who were assembled there; flags were suspended across the streets and from the windows; provisions and beds had grown scarce, and that evening Cologne had gone the extreme length of lighting up her cathedral with gas. "Seven hours of intense stupidity for ten minutes of splendour," was the savage commentary of one of the party whom I met at the University the next morning. I felt inclined to ask him to let me look at his tongue, feeling assured that he must be suffering from bile.

I had a great desire to sleep in a bed-room overlooking the Rhine, and now I had my wish. I could have fished out of the window, if I had been so minded, and had a fishing rod of ordinary proportions; and I sat at my window now, thoroughly enjoying the scene; the night was warm, the stars beautiful, and ever and anon a creeping light on the water showed the approach of a steam-boat. Half the night through, the steam-boats appeared to be passing, and all seemed to touch at Bonn. After I had sunk into bed even, I heard the tinkle of the bell, and the various noises that accompany a steamer's approach and departure. My morning look-out upon the Rhine was not so interesting; it was enveloped in a dense white mist, that prevented me from seeing more

than a few feet on the water ; and the mist had not entirely cleared away when I rose from my breakfast and betook myself to a medical meeting at the University. Several Professors spoke, one after the other, narrating interesting investigations in which they were engaged, or facts and observations which they thought instructive and worthy of note ; and then breaking up, betook themselves to various meetings in the town or neighbourhood. A group of geologists were treading the pathway towards Popplesdorf, where an assembly of their section was to take place ; while others were collecting for a grand rehearsal of a concert. Seeing them all so well occupied, and so much to their own satisfaction, I shook my friend Dr. Beneke by the hand, took my place in the railway for London, and soon left Bonn behind me.

As I have mentioned, at Pepinster I made a diversion to Spa, leaving my baggage to travel by itself to Ghent, where I hoped to pick it up the next day ; a piece of sleight of hand in which I succeeded admirably ; and then flying with the speed of steam, I passed Calais and Dover, and arrived at London Bridge on the night of Thursday, September 24th, the day three weeks of my departure from Home.

ON THE NATURE AND USES OF

MINERAL WATERS.

MINERAL WATERS owe their special properties to the mineral substances which they contain, these mineral substances being derived by solution from the soil or rock through which the water has filtered previously to reaching the surface of the earth. Therefore the analysis of the rock from which the spring is derived, will in most instances yield the bases of the various substances found in the waters, if not the substances themselves. Or if the rock do not contain the elements of all the substances discovered in the waters, the additional constituents may usually be traced to some other rock in the immediate neighbourhood of the spring. For example, in the instance of the muriated saline waters: while the greater part of the chemical components are distinctly referrible to the Rhenish shale, it is supposed that the soda is derived from the basalt; just as the soda of the Kreuznach waters is known to take its origin in the porphyry rock.

The mineral substances chiefly found in mineral waters, are, soda, magnesia, lime, iron, and sulphur ; and the acids principally combined with these bases, are, the muriatic, sulphuric, and carbonic. Thus, the muriatic acid uniting with soda, magnesia, and lime, will give origin to the compound salts, muriate of soda, muriate of magnesia, and muriate of lime, and distinguish the group of mineral waters known as the *muriated saline waters*. In like manner the sulphuric acid will give rise to sulphates of soda, magnesia, and lime, and constitute a group of *sulphated saline waters* ; and the carbonic acid with similar bases will form carbonates of soda, magnesia, and lime, and compose a third group of *carbonated saline*, or more correctly, *carbonated alkaline waters*. Iron is the basis of the chalybeate waters, and, to be held in solution, requires in the first instance to be united with oxygen, forming an oxide of iron ; and it is rendered additionally soluble and efficacious by a combination of the oxide of iron with carbonic acid gas, constituting a *carbonated or acidulated chalybeate water*. Sulphur, forming the peculiar characteristic of the *sulphureous waters*, is present in the shape of sulphuretted hydrogen, and may be combined either with the muriated saline water, constituting a *sulphuretted saline water* ; or with the carbonated saline water, so as to produce a *sulphuretted alkaline water*. In addition to the above, the presence of bromine and iodine in the waters gives rise to a *bromated* and *iodated*

saline water ; while certain waters are met with which are so deficient in salts of any kind as to deserve the distinguishing title of *negative waters*. Then a secondary division of mineral waters may be created, by dividing them into *cold*, and *thermal* or warm.

To form a better idea of these several groups of mineral waters, we will arrange them in the form of a table, as follows :—

MURIATED SALINE WATERS ;
SULPHATED SALINE WATERS ;
CARBONATED ALKALINE WATERS ;
CHALYBEATE WATERS ;
SULPHURETTED WATERS ;
BROMATED AND IODATED WATERS ;
NEGATIVE WATERS ;
THERMAL WATERS.

The MURIATED SALINE WATERS are represented by the springs of Wiesbaden, Homburg, Kissingen, Soden, Nauheim, and Selters ; and admit of division into *thermal* and cold.

The SULPHATED SALINE WATERS are represented by the springs of Carlsbad, Marienbad, and Franzensbad ; and throw off, as a sub-group, certain waters which contain a considerable proportion of sulphate of magnesia, as well as sulphate of soda : these latter are Saidsehütz and Püllna ; and, as a sub-group, become entitled to the designation of *sulphated saline magnesian waters*.

The CARBONATED ALKALINE WATERS are represented by the springs of Ems, Fachingen, and Geilnau; and are divisible into *thermal* and cold. But, besides this division, they admit of the formation of two other subgroups; namely, *carbonated alkalo-sulphated waters*, or waters containing a certain dose of sulphate of soda, such as the springs of Bilin and Rippoldsau; and *carbonated alkaline chalybeate waters*, such as the springs of Fachingen, Geilnau, Johannisbrunnen, and the natroned waters of Rippoldsau.

The CHALYBEATE WATERS are represented by the springs of Spa and Langen Schwalbaeh, and admit of subdivision into three groups:—1, *Simple carbonated chalybeate waters*, with very little else in their composition besides iron and carbonic acid; such as those of Spa, Brüekenau, and Langen Schwalbaeh; the entire of their saline constituents ranging between three grains and a quarter and four grains and a half. 2, *Muriated saline chalybeate waters*; such as Cronthal and Boeklet, which contain respectively twenty-seven and eleven grains of the muriates of soda and magnesia to the pint, in addition to their iron; and, 3, *Sulphated saline chalybeate waters*, such as the springs of Rippoldsau and Petersthal, in which there are from six to ten grains of sulphate of soda in the pint.

The SULPHURETTED WATERS are represented by the springs of Aix-la-Chapelle and Weilbaeh, and offer a

primary division into *thermal* and *cold*; and a secondary division into: 1, *Sulphuretted muriated saline waters*, such as Aix-la-Chapelle; 2, *Sulphuretted sulphated saline waters*, such as Sebastiansweiler, Heehingen, Boll, and the artificially *sulphuretted water of Rippoldsau*; and, 3, *Sulphuretted alkaline waters*; such as Weilbaeh, and the artificially sulphuretted water of Rippoldsau, which, besides twelve grains of sulphate of soda, also possesses thirty of bicarbonate of soda.

The BROMATED AND IODATED WATERS are the springs of Kreuznaeh, in Rhenish Prussia; those of Iwoniez and Luhatschowitz, in the northern part of the Austrian dominions; Adelheidsquelle and Hall, in southern Austria; and Wildegg, in the canton of Aargau, in Switzerland. The bromine and iodine are combined with soda and magnesia, constituting bromides of those substances. In the waters of Kreuznaeh, the salts are magnesian; in the waters of Hall, alkaline and magnesian; and in the rest, alkaline only.

The NEGATIVE WATERS are those which contain so very little saline matter of any kind as to be totally negative in their medical qualities, and only preserved from oblivion by their warmth. They are, therefore, thermal waters; and are represented by Sehlungenbad, Wildbad, Chaudfontaine, Teplitz, Badenweiler, and Gastein. In relative quantity of saline elements, they may be arranged as follows:—Badenweiler, 7.6 grains; Sehlungenbad, $6\frac{1}{4}$;

Teplitz, 5; Wildbad, $3\frac{1}{2}$; Chaudefontaine, $2\frac{1}{2}$; and Gastein, 2.

The THERMAL WATERS, taking them in the order of temperature and the highest grade of each, are as follows:—Borcette, 171° ; Carlsbad, 165° ; Wiesbaden, 158° ; Baden-Baden, 153° ; Aix-la-Chapelle, 131° ; Ems, 131° ; Teplitz, 120° ; Gastein, 118° ; Wildbad, 100° ; Ischl, 97° ; Baaden, 95° ; Chaudefontaine, 92° ; Nauheim, 90° ; Badenweiler, 81° ; Schlangenbad, 81° ; Soden, the milchbrunnen, 75° ; Canstatt, 69° ; and Berg, 68° .

As may be supposed, although represented by the terms, muriated saline, sulphated saline, carbonated alkaline, &c. there is a greater or less degree of intermixture of saline elements in these waters, and their principal designation must only be taken to represent a predominance of a given salt or given class of salts. For example, the Wiesbaden waters, although muriated saline in their chief composition, yet contain sulphates of soda and lime, but in very small quantity, less than a grain of each. In like manner, the waters of Homburg, Soden, and Selters, all contain sulphate of soda, but in small quantity; while those of Baden-Baden hold more than two grains and a half in the pint.

The same remark applies to the sulphated saline waters, Carlsbad, Marienbad, and Franzensbad; all contain muriate of soda, with carbonates of soda, lime, and magnesia. The waters of Rippoldsau and Gastein, besides sulphate of soda, contain muriate of soda and car-

bonate of lime. Usually, the predominating salt is one of soda; but, in the instance of the Baaden waters, the sulphate of lime is greater in quantity than that of the sulphate of soda.

Again, in the carbonated alkaline waters, those of Fachingen contain the muriate as well as carbonate of soda; and the waters of Ems, both muriate and sulphate of soda.

The waters enumerated under the head of carbonated chalybeate waters, are such as possess iron as their chief medicinal constituent; but, like other mineral waters, they are not limited to this element of their composition solely; they contain carbonates of lime, soda, and sometimes magnesia; together with muriate and sulphate of soda, in small proportion. Again, iron is also met with as an important constituent in most, if not in all the other groups of mineral waters; its absence being the exception and not the rule. The sulphureous and muriated saline springs of Aix-la-Chapelle, and those of Schlangenbad and Baaden are almost the only waters from which it is absent.

I have enumerated soda, magnesia, lime, iron, and sulphur, with the muriatic, sulphuric, and carbonic acids, as being the chief constituents of mineral waters; but, besides these, there are numerous other elementary substances occurring in small quantities: for example, bromine and iodine; phosphoric and fluoric acid; nitrogen

and hydrogen; ammonia; silix; strontia; alumina; manganese; lithia; arsenic; barytes; and copper.

MURIATED SALINE WATERS.

Looking at the composition of a muriated saline water, such as the Kochbrunnen of Wiesbaden, the Elizabethbrunnen of Homburg, and the Ragozi of Kissingen, which we may regard as the type of the thermal and cold waters of this class, we arrive at the conclusion that, in its medicinal action upon the human organism, it must be *alterative*; *aperient*, in a small degree; and *tonic*. Alterative, by virtue of its muriates of soda, lime, magnesia, and potash; sulphate of lime, and fluuate of magnesia. Aperient, but in a very limited degree, by its sulphate of soda; muriates of soda, potash, and magnesia, and carbonate of magnesia; and tonic, through the aid of its carbonate of iron. Then, in order to determine the degree of these qualities, we must ascertain the relative proportions of the different constituents, and their respective combinations; not only with the view of selecting those combinations which mutually aid each other in their action, but also with that of estimating the amount of opposition which would be presented by other substances of a different nature. For example, reverting to the three waters which I have selected as the type of the present class, the Kochbrunnen contains one grain and a half of carbonate of lime to the pint; but the Elizabethbrunnen possesses nearly, and the Ragozi more

than, eleven grains. This astringent substance must exert some kind of control over the water, even with a varied proportion of the chief constituent, which is present in the respective quantities, fifty-two grains, seventy-nine grains, and forty-four grains. And then, independently of the mineral substances, there is the temperature of the water, which is also not without its influence.

To compare the relative medicinal effects of the muriated saline waters, I will select the Kochbrunnen of Wiesbaden; the Elizabethbrunnen of Homburg; the Ragozi of Kissingen; and the Wilhelmsbrunnen (6 A) of Soden; four popular and important waters; and I will further take only their more bulky constituents, omitting such as occur in small or minute quantities. The chief constituents of these waters are, in the first place, muriates; secondly, salts of lime; thirdly, salts of magnesia; fourthly, iron; and fifthly, sulphate of soda; and their relative proportions in a pint as follow:

		Kochbrunnen.	Elizabethbrunnen.	Ragozi.	Wilhelmsbrunnen.
Muriate	Soda.....	52.4	79.1	44.7	104.1
„	Magnesia....	1.5	7.7	2.3	2.5
„	Potash.....	1.1	- -	2.2	- -
Lime	Muriate.....	3.6	7.7	- -	- -
„	Carbonate....	3.2	10.9	8.1	8.3
„	Sulphate.....	.6	- -	2.9	.9
Magnesia,	Carbonate....	-.07	2.0	- -	1.2
„	Sulphate....	- -	- -	4.5	- -
Iron	Carbonate....	-.04	-.4	-.2	-.3
Soda	Sulphate....	- -	-.3	- -	- -
		62.51	108.1	64.9	17.3
Carbonic acid, cubic inches..		10.3	48.5	41.7	48.9

A glance at this table will show, first, the large quantity of the *alterative element*, the muriates, in comparison with other salts; the small amount of the *aperient element*; the fair proportion of the *tonic element*; and the large quantity of the *astringent element*, the *drag* in fact, the carbonate and sulphate of lime. Therefore, in selecting either of the waters for use, our attention should be directed to the relative proportions of the aperient element and the *drag*; and in most instances that water must be considered the best which is the most aperient, all other conditions being equal. Regarding these four springs in this light, the Ragozi will be found the most *aperient*, from the presence of $4\frac{1}{2}$ grains of sulphate of magnesia, in addition to $4\frac{1}{2}$ grains of the muriates of magnesia and potash. I exclude the muriate of soda from consideration as an aperient on account of the difficulty of determining the extent of its aperient action. The Elizabeth spring of Homburg comes next, with 10 grains of mildly aperient salts; namely, sulphate of soda, carbonate and muriate of magnesia, and muriate of potash; the amount of *drag* being nearly the same in both, ten grains. Then follow the Wilhelmsbrunnen of Soden, and the Kochbrunnen, with less than four grains each of aperient salts, and nine grains, and nearly four grains, respectively, of *drag*. If the muriate of soda be contended for as an aperient, which it undoubtedly is in an uncertain degree, the relative position of the four springs would still be the same;

the sulphate of magnesia of Ragozi makes it an overpowering first; and the ten grains of the Elizabeth spring will more than counterbalance the $3\frac{3}{4}$ grains of the William spring, with its 23 grains of excess of muriate of soda.

Taking now the *alterative* salts, muriate of soda and lime; the total of grains would place Wilhelmsbrunnen first, the Elizabethbrunnen next; third, the Kochbrunnen; and fourth, Ragozi. But leaving out of consideration the more active aperient powers of Ragozi, which constitute it an alterative of the first class, and, in reality, place it first instead of last, the muriate of lime being a more energetic alterative than muriate of soda, would give the Elizabeth spring an ascendancy over the Wilhelmsquelle, and place it first on the list of *direct* alteratives. Again, comparing the 56 grains of the Kochbrunnen with the 104 grains of the Wilhelmsquelle, even though the former include three grains and a half of muriate of lime, the decision would be given in favour of the latter; but for a new condition, namely, *temperature*. There can be no question that the high temperature of a thermal spring renders its constituent salts more active, besides being more favourable for digestion, and places the Kochbrunnen at least on an equality with the Wilhelmsquelle; therefore the position of the four springs is scarcely changed, even as alteratives, from that which we have already assigned to them as aperients.

The importance of temperature as a condition of saline mineral waters is strikingly shown by these remarks ; it brings the thermal spring up to a level with another spring, containing nearly double the amount of alterative salts ; and a practical warranty is gained for this relative position of the springs, in the fact that more than double as much of a thermal water may be drunk, without inconvenience, as of a cold spring. In one sense, the thermal spring labours under a disadvantage, namely, the possession of less gaseous matter ; but even this disadvantage is counterbalanced by the higher temperature. The carbonic acid gas is dissipated by the heat, and is less in quantity, amounting, as will be seen by reference to the table, to less than a quarter of the bulk contained in the cold waters.

CARBONIC ACID GAS is an important constituent of mineral waters, a chief agent in the complete solution of the salts, and a principal means of making them acceptable to the stomach. The gas gives a freshness and piquancy to the water which improve its taste, and acts as a gentle stimulant to the nerves of the stomach ; exciting a warmth, which is artificially supplied by the thermal water, and increasing its vigour and power. In truth, without the carbonic acid, it would be impossible for the patient to drink the quantity of water necessary to produce remedial effects.

It is evident, therefore, that a mineral water is a more

complex element of investigation than at first sight might be conceived. It is complex in relation to its manifold constituents; in the mutual reaction of those constituents on each other; in its temperature; and, more probably than all, on the complete and thorough solution and blending of its constituents, solid, fluid, and gaseous, so as to produce a perfect and homogeneous whole. If we look to the source of the mineral waters, we can understand how this complex admixture is brought about; they are oftentimes filtered through miles of solid rock, while they are probably retained for years in the chasms and caves in which they originally accumulate. Or we may seek for an illustration in the uniform composition of the sea, where the most perfect solution of saline constituents is attained by the enormous pressure and perpetual agitation of the waters, and their constant intermixture with gaseous elements derived from the atmosphere. It might be asked, looking at the composition of the muriated saline mineral waters, why an equal quantity of table salt, dissolved in the same proportion of water, would not be as active a medicine as the mineral water? The answer has already been given; but I may illustrate it further by the mention of a fact that was lately brought under my notice by Mr. George Lewes, the distinguished physiologist and author. In the course of some observations on the structure and instincts of marine molluscous animals, he found that a few grains of

salt dropped into the stomach or sprinkled on the body of these creatures was speedily destructive of life. Now, in the instance of animals living in an element highly charged with salt like the sea, we are quite unprepared for such an effect as this, and can only explain it by again referring to the complete solution of the salt in the one case, as compared with its irritant qualities in an isolated and concentrated form.

The water of the ocean presents some differences in the proportions of its constituents in different parts of the world, being chiefly influenced by the number of rivers and quantity of fresh water mingling with it; but, in the Atlantic, it contains, of muriate of soda about 210 grains to the pint; of muriate of magnesia and sulphate of lime, 14 or 15 grains; sulphate of potash, 12 grains; sulphate of magnesia, 6 grains; and bromide of magnesia, 3; with traces of iodine. The medium temperature of the Atlantic sea is 50 to 59 degrees of Fahrenheit.

The muriated saline waters, arranged according to their strength in muriate of soda, are as follows; the number of grains of salt being placed opposite each:

	Grains.		Grains.
Homburg.....	117	Wiesbaden.....	52
Soden.....	114	Kissingen.....	44
Nauheim.....	109	Cronthal ...	27

	Grains.		Grains.
Wildbad (drinking spring)	24	Selters	17
Borcette	21	Berg.....	12
Canstatt.....	19	Schwalheim.....	11
Baden.....	17	Liebenzell.. ..	5

The muriated saline waters are useful in most forms of chronic inflammation of the mucous membrane, with increase of secretion or thickening; they are therefore serviceable in the relaxed throats of public speakers, singers, and preachers; in chronic bronchitis; in diseases of the lungs, even of the tuberculous kind; in chronic indigestion; enlargement of the liver; enlargement of the lower stomach; gall-stones; tumours of the organic system; rheumatism; gout; and rheumatic and gouty neuralgia.

SULPHATED SALINE WATERS.

The sulphated saline waters are distinguished by the presence of salts of soda, potash, and magnesia, combined with sulphuric acid, the chief constituent being sulphate of soda, or Glauber's salt. These springs are for the most part all grouped together in the mountainous districts of Bohemia, and especially in the valleys of the southern declivity of the Erz mountains, where we find Carlsbad, Marienbad, Franzensbad, Saidschütz, and the *bitter*

waters of Püllna. We may select, as examples of the sulphate of soda waters, and as representing the type of those waters, the celebrated Sprudel of Carlsbad; the Kreutzbrunnen of Marienbad; and the Franzensbrunnen of Franzensbad; while the Püllna waters may take their place by the side of the others, as exhibiting a highly concentrated solution of sulphate of soda, with a remarkable addition of sulphate and muriate of magnesia. The relative proportions of the principal constituents in a pint of these waters are as follows:

	Sprudel.	Kreutzbrunnen.	Franzensbrunnen.	Püllna.
Sulphate of Soda.....	14.9	36.2	25.4	123.8
„ Potash	9.3	— .4	—	4.8
„ Magnesia ..	—	—	—	93.0
„ Lime.....	—	—	—	2.6
Muriate of Soda.....	8.7	11.1	8.9	—
„ Magnesia ..	—	—	—	16.6
Carbonate of Soda.....	9.0	8.8	8.4	—
„ Lime.....	2.0	4.6	1.6	— .7
„ Magnesia .	— .3	3.5	— .5	6.4
„ Iron.....	— .03	— .3	— .06	—
Silica.....	1.0	— .6	— .3	1.7
	45.8	66.1	45.4	248.3
Carbonic Acid, cub. inches.	7.8	14.9	40.8	
Temperature.....	165°	53°	52°	

The waters of Baaden, near Vienna, belong to the sulphate of soda group, but contain only two grains and a half to the pint. The waters of Rippoldsau in Baden are also of the same class; but are remarkable for their large dose of carbonate of lime, namely, twelve grains and three quarters, the proportion of sulphate of

soda in the Josephsquelle being nine grains and a quarter. The waters of Saldschütz, on the other hand, belong to the sulphate of magnesia group, of which Püllna is the type, the quantity of magnesian salts in a pint being: of the sulphate, 84 grains; carbonate, 4 grains and three quarters; and nitrate, 25 grains.

A better notion of these waters, and their respective strength in aperient salts, may be gained by arranging them in a tabular form, as follows:

Sulphated Saline Group.

	Grains.		Grains.
Püllna.....	123	Rippoldsau.	15
Saldschütz	46	Petersthal.	6
Marienbad	38	Baaden.	2
Franzensbad.	26	Badenweiler.....	—
Gastein..... 1 grain.			

Sulphated Saline Magnesian Group.

Püllna.....	93 grains.
Saldschütz....	84 „
Baaden.	0.1 „

The sulphated saline waters are primarily *aperient*, and secondarily *alterative*; and in these respects they differ from the muriated saline waters which are primarily alterative and secondarily aperient. They also differ

from the latter in another and important particular, namely, in being alkaline; they are in reality *aperient*, *alkaline*, and *alterative*. The Sprudel contains, as we see by reference to the table, nine grains of carbonate of soda; the Kreutzbrunnen, nearly nine grains of carbonate of soda, with three grains and a half of carbonate of magnesia; and the Franzensbrunnen, nearly eight grains and a half of carbonate of soda. The bitter water of Püllna is less alkaline, being without carbonate of soda, but possesses in its place nearly six grains and a half of carbonate of magnesia. The dose of the *tonic* element, iron, is greatest in the Kreutzbrunnen; next, in the Franzensbrunnen; and least in the Sprudel; while it is absent altogether from the Püllna water.

In taking into consideration the medical powers of the Sprudel, the Kreutzbrunnen, and the Franzensbrunnen, we have also to estimate their respective temperature. The Sprudel is a thermal water, possessing 165 degrees of Fahrenheit, and consequently more active than the others which are cold. Indeed, in my opinion, the temperature of the water renders it more than equal to the efficiency of the others, independently of the facility of doubling the dose without inconvenience to the stomach. The quantity of carbonic acid gas in the Sprudel is one half less than that of the Kreutzbrunnen; while in the Franzensquelle its amount is very considerable.

The sulphated saline waters being primarily aperient

and secondarily alterative, are especially suited to those cases where an aperient action is required, and where the excretion of morbid elements from the blood requires to be effected through the mucous membrane of the alimentary canal and its appended glandular system ; in a word, where the elimination of morbid elements from the body is attended with obstruction in the digestive apparatus. They are therefore applicable to all the diseases for which the muriated saline waters are useful, and they are less liable to create congestion of the brain. In many instances, they may be employed in the commencement of a treatment which is afterwards followed up by the muriated saline waters ; or they may be used at the same time with the latter, or when the latter are administered only as baths. The sulphated saline waters are particularly serviceable in congestions or enlargements of the lower stomach, or where there is a superabundance of morbid humours in the blood.

CARBONATED ALKALINE WATERS.

The carbonated alkaline waters owe their special properties to the presence of carbonate of soda, with an excess of carbonic acid gas, constituting a bicarbonate of soda. They are consequently alkaline or *antacid* and *solvent* in their remedial capacity ; the latter term being intended to mark their power of softening and dissolving morbid tissues, and bringing them into a condition to be

more easily conveyed out of the system by absorption. The waters which may be taken as a type of this class, are those of Ems, Faehingen, and Bilin in Bohemia; and I have selected as examples the Krähnenbrunnen of Ems, the Hauptquelle of Faehingen, and the Josephsquelle of Bilin. The proportions are those in a pint of the waters :

	Krähnen	Haupt- quelle.	Josephs- quelle.
Bicarbonate of Soda	21.5	28.	23.1
Carbonate of Lime	3.0	28	3.1
„ Magnesia	3.0	2.2	1.0
„ Iron	trace	-.1	-.08
„ Manganese	trace	—	—
Muriate of Soda	2.0	4.5	3.0
Sulphate of Soda	1.0	-.1	6.3
„ Potash	—	—	1.0
Silica	—	-.2	-.2
	30.5	38.3	37.7
Carbonic Acid, cub. inches	20.3	32.9	
Temperature	91°	50°	53°

In looking over this table, we are struck by the similitude in proportion of the constituents; while the waters of Bilin declare their relation to those of Bohemia by the presence of sulphate of soda and potash. The quantity of iron is small in the Faehingen water; smaller still in the water of Bilin; and absent altogether in the water of Ems, its place being supplied by a trace of carbonate of manganese. The quantity of carbonic acid gas is considerable in all the three waters, and this is the more remarkable in a thermal water like that of Ems. The

waters of Johannisbrunnen, Geilnau, and Gieshübel, are weaker in carbonates than the former, containing, respectively, $13\frac{1}{2}$, 12, and 7 grains, with a large quantity of carbonic acid gas.

The relative strength of these waters in carbonate or bicarbonate of soda may be better seen by the following table, in which they are arranged according to their respective proportions :

	Grains.		Grains.
Faehingen.....	28	Geilnau	12
Bilin.....	23	Gieshübel	7
Ems	21	Teplitz.....	2
Johannisbrunnen....	13	Teinach.....	2

The carbonated alkaline waters are medically serviceable in chronic affections of the mucous membrane of the air passages ; in threatening consumption ; in gout and rheumatism ; neuralgia ; gall-stones ; tumours and chronic thickening of organs ; and in female complaints. In these cases, thermal baths are advantageously united with the internal administration of the waters.

CHALYBEATE WATERS.

The chalybeate waters are highly charged with carbonic acid gas, the average proportion of the free acid in a pint being about twenty cubic inches ; in one of the

weakest of the springs in gaseous elements, La Geronstere, of Spa, the quantity is only fourteen cubic inches; while in the Pouhon it is twenty-one and a half, and in the Stahlbrunnen of Brückenau, thirty-eight cubic inches. The iron is present in the form of a carbonate of the protoxide, and is commonly associated with manganese. Besides these there are saline and earthy carbonates in greater or less quantity, carbonates or bicarbonates of soda, magnesia, and lime. The carbonated chalybeate waters are simply *tonic*; and the proportion of their chemical constituents in a pint may be judged of by the four examples which I have selected as the type of these waters, namely, the Pouhon of Spa, the Weinbrunnen of Langen Schwalbach, the Stahlbrunnen of Bocklet, and the Stahlbrunnen of Brückenau.

	Pouhon.	Weinbrunnen.	Bocklet.	Brückenau
Carbonate of Iron.	-.87	-.44	-.61	-.09
„ Manganese.	-.05	-.06	-.001	-.03
„ Soda.	-.9	1.8	—	—
„ Magnesia.	-.3	4.6	3.3	-.1
„ Lime.	-.7	4.3	6.5	1.7
Muriate of Soda.	-.2	-.06	6.5	—
Sulphate of Soda.	-.03	-.04	2.5	-.08
„ Potash.	-.07	-.05	—	-.1
„ Magnesia.	3.2	-.4
Silica and Silicic Acid.	-.2	-.3	-.1
	3.3	11.9	28.6	3.4
Carbonic Acid, cub. inches.	21.6	20.8	39.3	38.
Sulphuretted Hydrogen.0008		

The analysis of the Weinbrunnen given above is the latest by Fresenius; he shows somewhat less than half

the quantity of iron indicated by the earlier analysis of Kastner, and he concludes that Kastner did not succeed in separating the whole of the oxide of manganese and silica.

Looking closely into the composition of the chalybeate waters, we find them to possess, besides the *tonic* element, iron, an *alkaline*, *aperient*, and *alterative* element, and, in addition, a certain amount of *drag* in the shape of lime and silica. The difference between the Pouhon and Weinbrunnen in the amount of iron is probably due more to the manipulations of the chemist, as has just been hinted at, than to a difference actually existing; but the Steel spring at Brückenau is apparently very deficient in iron. The *alkaline* element, bicarbonate of soda, amounts to nearly two grains in the Weinbrunnen, and one grain in the Pouhon, while it is absent altogether in the waters of Bocklet and Brückenau. The *aperient* salts are most abundant in the waters of Bocklet, amounting to nine grains; in the Weinbrunnen there are five and a half; in the Stahlbrunnen of Brückenau, barely three quarters of a grain; and in the Pouhon, less than half a grain. In the Pouhon and Weinbrunnen, the aperient element is chiefly the carbonate of magnesia, with a very small quantity of sulphate of soda and potash; whereas, in the waters of Bocklet and Brückenau, the aperient salts are sulphates of soda and magnesia; in the former, in considerable dose. The *alterative* element, muriate of soda, is very inconsiderable

in the Weinbrunnen and Pouhon, but larger in the waters of Bocklet, amounting to six grains and a half, while it is absent altogether in the Steel spring of Brückenau. The *drag*, consisting of carbonate of lime and silica, is greatest in the more aperient water of Bocklet, somewhat considerable in the Weinbrunnen, four grains and a half, and least of all in the Pouhon. The amount of carbonic acid gas varies between twenty and thirty-eight cubic inches; and there is, besides, a trace of sulphuretted hydrogen, indicating the probable source of the iron to be the sulphuret of iron or iron pyrites.

Besides the physiological classification, the chalybeate waters admit of a chemical classification, founded on the amount of alkaline, saline, or earthy salts, which they may contain in addition to their iron; the alkaline salts being carbonate or bicarbonate of soda; the saline salts, muriate or sulphate of soda and potash; and the earthy salts, magnesia and lime. According to this classification they have been divided into five groups, as follows:

1. *Alkaline Earthy Chalybeate Waters.*

Schwalbach.

Spa.

Altwasser.

Langenau.

Reinerz.

2. *Alkaline Saline Chalybeate Waters.*

Franzensbad.

Elster.

Füred.

3. *Saline Earthy Chalybeate Waters.*

Cronthal.	Liebenstein.
Rippoldsau.	Pyrmont.
Driburg.	Cudowa.

4. *Earthy Saline Chalybeate Waters.*

Bocklet.	Petersthal.
Brüekenau.	Teinaeh.

5. *Earthy Chalybeate Waters.*

Imnau.

The diseases in which the chalybeate waters are of essential service, are those of debility from deficiency of blood in the body, either from previous loss, or from imperfect formation. They are sometimes employed as the after-cure in maladies of various kinds attended with debility; and are particularly serviceable in anæmia from whatever cause, and debility of the mucous membranes of the body, whether of the respiratory, digestive, or organic system. Chalybeate waters are also indicated in cases of serofula accompanied with inertness of the general powers.

SULPHURETTED WATERS.

The sulphuretted waters are essentially *alterative*, acting specially on the secreting organs, such as the

liver, the kidneys, and the skin; indeed, upon all the mucous membranes of the body, as well as the cutaneous surface. The action of these waters is further increased by temperature, and therefore we have to distinguish the *thermal* waters from those that are cold. The THERMAL SULPHURETTED WATERS, arranged in the order of their maximum degree of temperature, are as follow:

Pöstény	147°	Warmbrunn	99°
Aix-la-Chapelle*	131°	Baaden	95°
Baden (Aargau)	124°	Sehlinznach	88°

The sulphuretted waters also possess muriated saline, sulphated saline, and alkaline elements, and have their special properties modified by the nature of these salts; thus, they may be more actively alterative when holding the muriated salts in solution; or they may be rendered aperient by the addition of the sulphates of soda or magnesia; or they may be antacid and solvent, when their predominating salts are the carbonates of soda and magnesia.

The SULPHURETTED MURIATED SALINE WATERS are as follow, the maximum quantity of the predominating salts being placed against each, thus:

* According to Liebig.

Aix-la-Chapelle	20 grains.
Baden (Aargau).....	13
Schinznach	6.6

The waters of Aix-la-Chapelle are therefore *alterative* in a double sense, and antacid and solvent by the addition of nearly five grains of carbonate of soda to the pint; while they contain somewhat more than three grains of the aperient salts, sulphate of soda and potassa. The waters of Baden in the Aargau in Switzerland, in addition to thirteen grains of muriate of soda, possess four and a half of the aperient sulphates of soda and magnesia. And the waters of Schinznach, also in the Aargau, with half the quantity of muriate of soda, have a nearly similar amount of aperient salts of the same kind.

The SULPHURETTED SULPHATED SALINE WATERS, with the maximum amount of sulphate of soda in the pint, are as follow :

	Grains.		Grains.
Pöstény	9.	Baaden	2.5
Sebastiansweiler...	4.5	Warmbrunn	2.
Hechingen.....	3.4	Langenbrücken4
Boll	3.3	Rippoldsau.....	12.2

The aperient element in these waters, it will be perceived, is very small; namely, only nine grains in the

springs of Pöstény, in the Little Carpathian Mountains, with less than three of sulphate of magnesia; one half less in those of Sebastiansweiler, with less than two grains of sulphate of magnesia; and progressively decreasing through the rest. The total quantity of solid salts, in a pint of the waters of Pöstény, is 22.4 grains; Baaden, 14.4; Sebastiansweiler, 11.3; Hechingen, 9.8; Boll, 6.1; Langenbrücken, 4.2; and Warmbrunn, 4.6. Rippoldsau is not strictly a natural water; and therefore, although more powerful and probably efficient than any of the others, I do not compare it with them, but consider it apart. In its natural state, it possesses no sulphuretted hydrogen; this is added artificially, and it then becomes a valuable water, containing, besides sulphuretted hydrogen and carbonic acid, 12.2 grains of sulphate of soda, with 30.1 bicarbonate of soda; and a total of saline elements, amounting to 48 grains.

The SULPHURETTED ALKALINE WATERS, distinguished by the presence of carbonate of soda as their predominant salt, include the springs of Weilbach, Reutlingen, and the artificially sulphuretted water of Rippoldsau. The waters of Weilbach contain 4.5 grains of carbonate of soda, with a total of 11.9 of solid salts in the pint; the waters of Reutlingen have only four-tenths of a grain in a total of 3.9; while the artificially *natroined* waters of Rippoldsau contain, as we have just seen, 30.1 grains of the bicarbonate of soda in the pint.

Reviewing the sulphuretted waters according to the principle I have before laid down for testing their relative medical properties, namely, comparing the respective quantities of their *alterative*, *aperient*, *alkaline*, and *tonic* elements, as well as their amount of *drag*, the latter comprehending their lime, alumina, and silica, we shall find, omitting at present all consideration of the sulphuretted hydrogen gas, the greatest amount of *alterative salts* in the waters of Aix-la-Chapelle (20.2) ; Baden, in Aargau (13.7) ; and Schinznach (6.6) ; while in the rest the quantity is very trifling. Besides the common alteratives, certain special alteratives are also found in these waters, namely, iodine, bromine, strontia, bitumen, and arsenic. Iodine is met with in the waters of Hechingen ; iodine and bromine occur in those of Warmbrunn ; iodine and bitumen in the waters of Sebastiansweiler ; iodine, bromine, and strontia, in those of Aix-la-Chapelle ; bitumen alone in Langenbrücken ; strontia, in Weilbach and Baden, Aargau ; and arsenic in the springs of Rippoldsau.

In *aperient salts*, Pöstény, Rippoldsau, Sebastiansweiler, Hechingen, and Baden, Aargau, are most rich, descending from 13.6 to 5 grains. The *natroined* Rippoldsau contains most of the *alkaline* salts, 30.1 ; Aix-la-Chapelle having 4.9 ; and Weilbach, 4.5 grains. The *tonic* element, iron and manganese, is present in five of the waters ; namely, four-tenths of manganese, and one-

tenth of iron in the Rippoldsau; seven-hundredths and six-hundredths of the two metals in the springs of Aix-la-Chapelle and Sebastiansweiler; and five-hundredths and two-hundredths of iron alone in Langenbrücken and Reutlingen. The amount of *drag* is found at the maximum in the waters of Baden, Aargau, namely, 13.3 grains; next in Schinznach, 7.9; Baaden, 7.2; and in the rest it falls below five grains.

The diseases in which the sulphuretted mineral waters have obtained a reputation are such as depend on the rheumatic and gouty mal-assimilation. For example, gout, rheumatism, neuralgia, chronic bronchitis, certain cutaneous eruptions, chronic dyspepsia, chronic disease of the liver, with enlargement of that organ, and chronic enlargement of the lower stomach.

BROMATED AND IODATED WATERS.

The bromated and iodated waters are distinguished by the presence of salts of bromine and iodine, either in combination with soda or magnesia, constituting bromides of soda and magnesia, and iodides of soda and magnesia. These salts are most abundantly present in the waters of Hall, in the Tyrol, and Adelheidsquelle, in the Bavarian Alps; they are also found in considerable quantity in the springs of Wildegg in the Aargau of Switzerland; in

those of Iwonicz, in Galicia; in the Vincentiusquelle, of Luhatschowitz, in the Carpathian Mountains; and in the waters of Kreuznach. The springs of Hall contain the bromide and iodide of magnesia, together with the iodide of soda; those of Adelheidsquelle, Iwonicz, Wildegg, and Luhatschowitz, contain the bromide and iodide of soda only; and the springs of Kreuznach, bromide and iodide of magnesia. The proportions in which these salts are present are as follows:

	Grains.		Grains.
Hall.....	0.85	Wildegg.....	0.44
Adelheidsquelle...	0.57	Luhatschowitz..	0.38
Iwonicz.....	0.45	Kreuznach	0.30

Besides these special *alterative* ingredients, the bromated and iodated mineral waters contain muriate of soda in considerable quantity; namely, $23\frac{1}{2}$ to 112 grains; and three out of the number, namely, Hall, Wildegg, and Kreuznach, muriate of lime; the two former less than three grains each, the latter $13\frac{1}{4}$ grains. These waters are very deficient in *aperient* elements; in three, there is less than one grain of aperient matter; in two, less than three grains; and in the remaining one, Wildegg, under thirteen grains, of which $12\frac{1}{2}$ are muriate of potash. They may be said to contain no sulphates, with the

exception of Wildegg, which has something more than a quarter of a grain of sulphate of soda, and 14 grains of sulphate of lime. The *alkaline* element is only present in the waters of Iwonicz, Luhatschowitz, and Adelheidsquelle, in the proportion of 13, 12, and 6 grains to the pint. The *tonic* element is met with in all, and in fair quantity; carbonate of iron in the waters of Hall, Adelheidsquelle, and Wildegg, in the dose of from six to eight hundredths of a grain; and, combined with carbonate of manganese, in those of Kreuznach, Luhatschowitz, and Iwonicz; the dose of iron in the three latter being 0.15, 0.11, and 0.03 of a grain; and of manganese, 0.08, 0.03, and 0.01. The amount of sulphate and carbonate of lime, with alumina and silica, in other words, of *drag*, in these waters, is also very trifling: 14.5 grains for Wildegg, 5 for Luhatschowitz, less than 2 for Kreuznach and Iwonicz, and less than 1 for Adelheidsquelle and Hall. Besides bromine and iodine, the waters of Luhatschowitz contain the special alteratives, strontia and barytes; and those of Iwonicz, a small quantity of bitumen. Organic matter to the amount of 0.16 of a grain is found in the springs of Adelheidsquelle, and, in smaller proportion, in those of Iwonicz and Hall.

The result of this analysis shows that the bromated and iodated saline waters are essentially *alterative* and

mildly *tonic*; two of the number are weakly antacid, but they possess no aperient qualities, which, if required, must be supplied artificially.

The spring which supplies the Urania hotel at Kreuznach, the waters whereof are exclusively used as baths, possesses a much larger quantity of bromide of magnesia than any of the waters heretofore considered; namely, nearly two grains (1.78) to the pint, with one hundredth of a grain of iodide of magnesia. This spring also contains nearly 109 grains of muriate of soda. The *mutter-lauge*, or mother lye, supplied by the salt-works, and commonly employed, dissolved in plain water, for baths, is a concentrated form of the bromated waters, containing between 59 and 84 grains of the bromide of soda, the iodine being dissipated by the process of evaporation, and about 226 grains of muriate of soda.

The bromated and iodated waters are medically serviceable in scrofula and all diseases springing from a scrofulous origin; in enlargement and induration of the glands of the neck; enlargement of the tonsils and thyroid gland; also in a similar state of the mammary and mesenteric glands. In scrofulous affections of the eyes, nose, or ears. In diseases of a scrofulous character, attacking the organs of respiration, the bronchial passages, and lungs. In scrofulous joints and bones; and in diseases of a scrofulous nature occurring in the nervous system, the skin, or the internal organic system. Dr. Engle-

mann informed me that he had treated with success a case of elephantiasis græcorum, the ancient leprosy of Europe, by means of the waters of Kreuznach, and particularly by the baths of the *mutterlauge*.

NEGATIVE WATERS.

As the negative waters owe their medical properties chiefly to their warmth, we may arrange them in the order of their temperature, beginning with the hottest; thus :

Teplitz.....	120°	Chaudefontaine...	92°
Gastein.....	118°	Badenweiler	81.5°
Wildbad	100°	Schlangenbad	81°

In respect of their chemical composition, they may be grouped under the three heads which we have already adopted for the mineral waters; namely, *muriated saline*, of which are Schlangenbad, Wildbad, and Chaudefontaine; *sulphated saline*, comprehending Badenweiler and Gastein; *carbonated alkaline*, the waters of Teplitz. In medical properties they may be either *stimulant* or *sedative*, according to their temperature and their mode of application; stimulant to the skin, so as to increase its functions; stimulant to the nerves, when used in the form of douche and combined with friction; and sedative when employed at a moderate temperature and in a passive state of the muscular system and brain.

THERMAL WATERS.

The thermal waters belong to the various classes into which mineral waters in general are divided; some are *muriated saline*, some *sulphated saline*, some *carbonated alkaline*, some *sulphuretted*, and others *negative*. Their temperature serves to increase the power of action of the salts which enter into their composition, renders them more acceptable to the stomach, and enables the stomach to bear a larger dose than it could otherwise digest. The warmth is also serviceable as determining an action of the secreting and emunctory organs, particularly the skin. These remarks apply to the waters when taken internally; and the high temperature is equally powerful, as a medical agent, when the waters are employed externally in the form of baths; being either stimulant or sedative, according to the degree of temperature, and according to the mode of administration of the bath. The thermal waters, again, afford us another important and valuable agent in the steam which they give off, and which, collected by an appropriate apparatus, constitutes a vapour bath.

At a previous page, I have arranged the principal thermal waters in the order of their temperature; I will now divide them into groups corresponding with the more important salts which enter into their composition. For example, the *muriated saline thermal waters* are:

Wiesbaden.	Canstatt.
Baden Baden.	Berg.
Boreette.	Liebenzell.
Nauheim.	Wildbad*.
Soden.	Ischl.

The sulphated saline thermal waters are those of
Carlsbad and Badensweiler.

The carbonated alkaline thermal waters are represented by Ems alone, Teplitz being transferred to the group of negative waters.

The sulphuretted thermal waters are :

Aix-la-Chapelle.	Baden, Aargau.
Baaden.	Schinznach.
Pöstény.	Warmbrunn.

The negative thermal waters are :

Schlangenbad.	Teplitz.
Wildbad.	Badenweiler.
Gastein.	Chaufontaine.

In the absence of a natural temperature, the cold saline waters are raised to a temperature suitable for baths by artificial means ; and are thus made applicable to a variety of medical purposes.

* Drinking spring.

THE END.

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